Formatting Battlefield Function Function Analysis for Automated Systems Approach to Training

Bartholomew J. McIlroy, Jr.
and
William Mullen
BDM Federal, Inc.

Armored Forces Research Unit
Barbara A. Black, Chief

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EDGAR M. JOHNSON
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14. ABSTRACT *(Maximum 200 words)*:

The Armored Forces Research Unit, U.S. Army Research Institute for the Behavioral and Social Sciences (ARI), in coordination with the U.S. Army Force XXI Training Program (FXXITP), has sponsored research on the utility of battlefield functions (BFs) for training the armored brigade. This research is a continuation of previous work performed to analyze and use BFs applicable to the heavy battalion task force to support a Functional Approach to Training strategy. This report provides the history and lessons learned for the effort to analyze seven BFs applicable to the armored brigade, as well as describes the methodology and procedures used to develop function analyses (FAs) for the selected brigade BFs. The methodology and processes used for the development of BF FAs are described and provide the basis for future development of BF FAs for other type units and echelons.

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The U.S. Army has long pursued training methods to improve the performance of combined arms operations and utilize new and emerging technologies to support training. Meeting these challenges takes on added significance since training must now consider increasingly scarce resources as well as higher costs of operating weapon systems, force downsizing, and tighter defense budgets. As a result, Army trainers have begun to look more closely at innovative methods and techniques to assist them in achieving training goals.

The Force XXI Training Program (FXXITP) at Fort Knox, KY, involved in developing innovative training techniques for brigades, joined with the U.S. Army Research Institute (ARI) to sponsor research to analyze selected battlefield functions (BFs) relevant to armored brigades and to determine the utility of incorporating BF function analyses (FAs) into the Army's Automated Systems Approach to Training (ASAT). Incorporation of BF FAs into ASAT make it possible to leverage the Army's technology advances to share the BF FAs with the entire training community for training information management, development, and support.

This report documents experiences and lessons learned from formatting a brigade BF FA for ASAT. Trainers and training developers will find this report useful for the insights it provides about the processes and techniques of formatting BF FAs for ASAT. The capability of unit users to access and utilize BF FAs in ASAT is contrasted with that of training developers.

ZITA M. SIMUTIS
Technical Director

EDGAR M. JOHNSON
Director

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FORMATTING BATTLEFIELD FUNCTION (BF) FUNCTION ANALYSIS (FA) FOR AUTOMATED SYSTEMS APPROACH TO TRAINING (ASAT)

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FORMATTING BATTLEFIELD FUNCTION (BF) FUNCTION ANALYSIS (FA) FOR AUTOMATED SYSTEMS APPROACH TO TRAINING (ASAT)

Purpose

This report documents the analysis and research performed to format Battlefield Functions (BF)[1] Function Analyses (FAs)[2] into the Army's Automated Systems Approach to Training (ASAT).

Background

The U.S. Army is developing innovative techniques that can be used to assist Army trainers in achieving training goals. A portion of the Force XXI Training Program (FXXITP), supported by the Army Research Institute's (ARI's) Armored Forces Research Unit at Ft. Knox, KY, is such a program. The FXXITP is concerned with brigade and below levels of training. In order to broaden the knowledge base, an effort entitled "Critical Combat Functions for Force XXI Training Program," was initiated. This research concentrated on the development of FAs for seven BFs as performed by a maneuver brigade.

Initial research and analysis on BFs and the Functional Approach to Training began in 1988 and culminated in 1995 with the development of a model training strategy and the production of 24 BFs relevant to battalion task force (Bn TF) operations. As a result of research on the Functional Approach to Training, a method of using BFs to identify interrelationships at the task level between and among echelons and the Battlefield Operating System (BOS) was demonstrated. That method proved to be useful in training development that pertained to Army units and various echelons. In addition, the FA methodology developed and applied in the Bn TF BFs and in the function-based training strategy was determined to be complementary to the task identification procedures presently in use by the U.S. Army Training and Doctrine Command (TRADOC). The use of BFs for describing aspects of a function applicable to a specific echelon and the use of BF FAs as a source of data to build applications (e.g., assessment tools) are described below in the section titled Development and Organization of BF FAs.

The development of 7 brigade BF FAs for this contract was designed to build on the insights into FA methodology gained during the previous development of FAs for the 24 BFs relevant to the maneuver Bn TF and one of the 26 BF FAs relevant to brigade operations[3]. The purpose of this work was to extend the information already gathered to encompass the greater

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[1] BFs were termed Critical Combat Functions (CCFs) in previous work. The term "Battlefield Functions" was approved by the U.S. Army Training and Doctrine Command (TRADOC) in September 1996.

[2] Fas were termed Task Analyses (TAs) in previous work. The term "Function Analysis" was approved by the TRADOC in September 1996.

[3] "CCF 15, Coordinate, Synchronize, and Integrate Fire Support."

and more complex responsibilities of the brigade while focusing on Combat Support (CS) and Combat Service Support (CSS).

Seven BFs for the brigade, spanning three of the BOSs, were specified for analysis.

Intelligence BOS:

- BF 1, Conduct Intelligence Planning
- BF 2, Collect Information
- BF 3, Process Information
- BF 4, Disseminate Intelligence

Mobility, Countermobility, and Survivability BOS:

- BF 21, Overcome Obstacles

Combat Service Support BOS:

- BF 28, Provide Transport Services
- BF 29, Conduct Supply Operations

Initially, the research project included the requirement that all BF FAs would be formatted in ASAT in order to leverage technological advances made by the Army on training information management, development, and support. It was anticipated that the integration of BF FAs into ASAT would increase their utility by making the information more easily accessible to Army users. Entry of all brigade BF FAs into ASAT was to be predicated on the results of research and analysis of the utility of ASAT's presentation of the information developed in a BF FA.

The aspect of the research project that focused on formatting BF FAs and using ASAT to access BF FAs was conducted from a unit trainer's perspective. However, it had been anticipated that conclusions about accessibility and utility would hold true for other potential users of ASAT. This perspective was selected because the Functional Approach to Training and BF FAs were developed to support unit commanders and their staffs in planning and assessing unit training. During the course of peer reviews of an earlier version of this report, insights and techniques for accessing BF FAs through ASAT from the perspective of training developers were identified by the U.S. Army Armor School. These insights have been incorporated into this report in the section titled "Alternative Techniques to ASAT Format BF FA Components" (Santillan, 1995).

ASAT Software Development

In order to understand the technical challenge of formatting a BF FA into ASAT, it is necessary to provide a brief description of ASAT development. The U.S. Army Training

Support Center (ATSC) is the proponent for ASAT. The ASAT has been developed for the Army as a management and information system designed to provide total task management and task creation capability. The ASAT is a relational database designed to:

- Provide training information support, development, and management.

- Provide effective and efficient production of training products.

- Ensure product information standardization.

- Allow total task management.

- Support a variety of Army user requirements.

The ASAT software provides the capability to link information from multiple sources to collective tasks. Sources may include tables of organization and equipment (TOEs), missions, BOS, echelons, training products, references, and doctrine. The ASAT software allows collective tasks to be linked to individual tasks. Individual tasks can be linked to their various sources, such as occupational specialties and professional development courses.

The ASAT also provides users with access to the Training and Evaluation Outlines (T&EOs) as they are published in the Army Training and Evaluation Program - Mission Training Plans (ARTEP-MTPs) and Soldier Training Publication (STPs). The ASAT allows users to query a single source for Army task information. As such, ASAT will act as a means of integration across both developing and already developed Army training systems, including the Standard Army Training System (SATS).

The ASAT Version 1.0 was first fielded by ATSC in January 1994 and contained digitized ARTEP-MTPs. The ASAT Version 2.0 was fielded in December 1994 in a DOS application and expanded the database to include digitized STP information. In October 1995, ASAT Version 3.0 was fielded; this version had been upgraded to operate in WINDOWS 3.1 to simplify its use. The ASAT Version 3.1 was fielded in late March 1996 and provided additional enhancements as well as corrected software "bugs."

Development and Organization of BF FAs

Previous research on the Functional Approach to Training performed by the Army and BDM between 1988 and 1995 resulted in development of a model training strategy and the BF concept (McCluskey, in press). That research was performed in support of efforts to refine and expand the BOS to a level of granularity that permits description of inter-BOS linkages in order to portray combined arms interaction. The Functional Approach to Training details a training strategy which employs the use of functions to optimize combined arms training at all echelons. That research resulted in the identification of 39 BFs relevant to all Army tactical echelon units. This list of 39 BFs was approved by the Combined Arms Training Activity (CATA) at Fort Leavenworth, KS , n 1993 for use in research.

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The BFs are defined as: "processes or activities occurring over time that must be performed to accomplish supporting critical tasks. It provides task integration, combined arms interaction, and inter-Battlefield Operating System linkages."[4] To describe these processes and activities to accomplish tasks, FAs for BFs are developed. FAs are constructed with multiple components which organize and describe relationships between tasks, participants, and information for the performance of the BF by the unit being analyzed. The components of a BF FA support the Functional Approach to Training by allowing the development of training assessment and planning modules.

Each BF represents a distinct function derived from the BOS at a level of aggregation small enough to permit a description of inter-BOS linkages. The synchronization of BFs provides commanders, at any echelon, a method with which to simultaneously apply all of the elements of combat power. These 39 BFs apply to combat, combat support, and combat service support units. The BFs enable the functional approach to be used in unit training, training development, and combat development by furnishing the level of detail that permits examination of the components of the function.

In order to appraise the formatting of a BF FA into ASAT, it is necessary to first understand the organization of a BF FA. It is axiomatic that the array of data developed in an FA is dependent upon the intended application of the FA. The intended application for a BF FA therefore determines the number and types of its components. The number and types of components for the BF FAs developed in this research were designed to support unit training. As such, each BF FA of this project consists of nine separate components. These components, and their purpose and intent are:

Overview. Provides necessary and relevant information concerning the development of the BF FA. It describes which actions cause the BF to be initiated and completed, identifies the sources used for determining the structure and organization of the unit the BF FA is developed for, and defines other critical information which must be considered when utilizing the BF FA to plan or assess training.

User's Guide. Facilitates use of the BF FA. It provides information on how the BF FA can be used to achieve a variety of purposes. This guide provides examples for how a BF FA can be used by force developers, material developers, doctrine developers, training developers, and unit commanders to meet multiple needs. As a guide, it provides valuable information on the interrelationships between BF FA components and how they can be used to accomplish specific end states.

Task List Summary. Provides a summary of the first level of tasks on the task list.

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[4] CCFs were previously defined as: "an integration (i.e., interrelationship) among participants and tasks that represents a force multiplier with a definable outcome." This definition was redefined in September 1996 when TRADOC renamed CCFs as BFs.

Task Analyses. Each TA consists of nine subcomponents:

Purpose and Outcomes. Identifies what the BF is supposed to accomplish overall (termed as the Purpose), and identifies the end states or bottom line results necessary to achieve the purpose (termed as Outcomes). This subcomponent defines the end states that performance of the tasks will accomplish.

Flow Chart. Provides a graphical/pictorial description of BF tasks as they are sequenced within the framework of tactical battle phases (e.g., planning, preparation, execution). The purpose of this subcomponent is to describe: the flow of tasks during each battle phase; vertical task linkages (to higher and lower echelon units) and horizontal task linkages (to other BF tasks for the echelon being analyzed); and to depict information input and output which affect each task.

Task Linkages to Other BFs/Units. Links the tasks performed as part of a BF with the tasks performed in other BFs or by other units. The purpose of this subcomponent is to allow the trainer or training developer to incorporate related tasks and participants into a training exercise for a BF.

Key Participants by Task. Identifies the training audience for training events for the BF tasks. The purpose of this subcomponent is to help commanders and trainers identify the training audience required for a training event.

Key Inputs and Outputs. Key Input is critical information required by participants to successfully accomplish the BF. Key Input information is that information required to drive a training exercise for a BF. Key Output describes critical information generated by participants to successfully accomplish the BF. When information results from the performance of the BF tasks, BF information output is identified. One BF's information output normally is provided as another BF's input.

Task List. Identifies, organizes, and lists in a logical sequence all of the tasks and sub-tasks necessary to perform the BF. The tasks are extracted from the appropriate doctrinal publications and sources.

Lessons Learned Integrated into the Task List. Identifies the lessons learned extracted from U.S. Army Center for Army Lessons Learned (CALL) publications relevant to performing the BF. The purpose of this subcomponent is to provide the most recent tactics, techniques, and procedures (TTP) associated with the performance of the tasks in a BF.

Gate Tasks. Identifies critical individual or collective tasks upon which each BF task identified in the Task List is dependent. In order to ensure efficient and safe training of major tasks, the participants should have achieved a satisfactory level of proficiency or understanding in these gate tasks.

Tasks Organized by Outcomes. Links the tasks with the BF outcomes the task performance supports. Each outcome is linked with all appropriate tasks. This subcomponent is used for two purposes. The first is to ensure that each BF outcome is sufficiently supported by all tasks necessary to achieve the outcome. The second is to verify that the outcomes selected support the BF purpose and that they are complete in that no additional outcomes are required to define the BF. This subcomponent of the BF FA contributes to training assessment and planning.

References. Identifies the references and sources used for the development of the BF FA components.

Acronyms and Abbreviations. Identifies the acronyms and abbreviations used in the BF FA. Acronyms and abbreviations are derived from doctrinal publications.

Index of BFs. Lists the 39 BFs for each BOS which have been identified as relevant to U.S. Army tactical echelon units. The purpose of this component is to depict the BOS and the BF which define each BOS. This component aids the user in understanding the nature of BFs and the relationships of BF to each other and to tasks.

Structure of BFs. Provides a description of each BF and the BOS with which it is aligned. Included with each BF definition is a listing of major doctrinal topics and aspects addressed by the BF. These definitions provide the framework required to understand the focus of each BF. This component aids the user in understanding the BF and the relationships of BFs to each other and to tasks.

BFs Listed by Echelons. Depicts the identification of BFs to the echelon/type unit based on previous research and analysis. This component in a BF FA provides a guide depicting which BFs are applicable to training particular echelons and units. As a guide, it allows the user to map the relationship of BFs horizontally and vertically.

Entry of a BF FA into ASAT

The approach taken during this effort to format brigade BF FAs into ASAT was one which sought to ensure that once a brigade BF FA was entered into ASAT it could be accessible to the entire Army training community. To achieve this, four guidelines were established for the entry of brigade BF FA information into ASAT. The guidelines were:

- Ensure that each brigade BF FA component maintains its integrity (i.e., that it does not become segmented and placed into more than one of the ASAT Individual Task modules' fields).

- Ensure that brigade BF FA components retain their context in ASAT as portrayed in the BF FA.

- Format as many of the brigade BF FA components as possible in ASAT.

- Present brigade BF FA components in the ASAT module fields in such a manner that the user will not become confused.

Preliminary Coordination and Analysis

In May 1995, coordination with the ATSC and the Analysis Branch, Training Development Division, U.S. Army Armor School was initiated. This coordination was necessary to determine ASAT software capabilities and to identify how best to format a brigade BF FA into ASAT. Cooperative and coordinated efforts with ATSC and the Armor School were essential for two primary reasons.

First, ASAT software was still in development and would be fielded in several different versions during the performance of this research. The software in ASAT Version 2.0, fielded in December 1994, was being upgraded and was scheduled to be released in October 1995 as ASAT Version 3.0. Insights from ATSC on software capabilities for ASAT Version 3.0, as well as other projected versions, were considered important.

Second, ATSC and the Armor School had initiated work earlier to enter all 24 published BF FAs for the maneuver Bn TF (Armstrong, personal communication, September, 1996). This was the first attempt to enter information in ASAT which was not structured or organized in the format contained in ARTEP-MTPs and STPs. BDM supported ATSC's and the Armor School's efforts to enter Bn TF BF FA information into ASAT by providing relevant information on the structure and organization of BF FAs. Since ATSC's and the Armor School's efforts were performed concurrently with the research effort, which is the subject of this report, close cooperation was expected to be beneficial to the brigade BF FA project.

BFs Designated as ASAT Tasks

Through coordination with ATSC and the Armor School, it was determined that ASAT software could only portray data or information which was organized in the form of an ARTEP-MTP or STP task. Based on this restriction it was determined that a "work around" solution was required since a BF FA is not organized in that form. The only feasible work around solution had already been developed by the Armor School during its ASAT formatting of the first Bn TF BF FA. That solution was to enter a BF into ASAT in the context of an ARTEP-MTP or STP task. This approach was accepted by ATSC and BDM for the effort.

To understand the impact of this work around, it is necessary to describe the differences between an ARTEP-MTP or STP task and a BF. A task is defined in FM 25-100, Training the Force, as: "a clearly defined and measurable activity accomplished by individuals and organizations. Tasks are specific activities which contribute to the accomplishment of encompassing missions or other requirements." This is the definition used for ARTEP-MTP, Drill, and STP tasks. In contrast to this, a BF FA, as described above, is the dissection of a BF to describe the interrelationships among participants and tasks. As such, the components of a BF FA provide detailed and extensive information relevant to the performance of the function by a

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unit. Each component is structured to contain information on a specific aspect of that BF. Based on this, there is more information contained in a BF FA and a greater level of detail and information on more areas than in an ARTEP-MTP or STP task.

Although this work around in ASAT limits and restricts the use of a BF FA by forcing it to be compatible with a task, it was necessary in order to continue research and analysis on the utility of BF FAs in ASAT. Additionally, the formatting effort was expected to provide opportunities for making recommendations to ATSC on enhancements for future ASAT software which could better support the entry, display, and use of BF FAs.

Selection of an ASAT Module for Entry of Brigade BF FAs

Based on the work around protocol, it was next necessary to select an ASAT module which could best portray the components of a BF FA. The ASAT database is constructed to support the Army training community by providing a task-oriented relational database. As such, ASAT modules were designed to provide necessary information for a specific, single task. Four functional modules were employed in ASAT to provide users with access to task information or to create products[5]. These functional modules are:

- Collective Tasks

- Individual Tasks

- Drill Tasks

- Resource Management

The Armor School and ATSC performed initial assessments of each of the ASAT modules to support their earlier ASAT formatting of the 24 Bn TF BF FAs. They found that the ASAT Individual Task Module provided the greatest capability to display information contained in the 24 Bn TF BF FAs.

BDM performed a separate analysis to determine which ASAT module would best support the formatting of the brigade BF FAs. Since the brigade BF FAs were to be entered into ASAT in the manner that ARTEP-MTP or STP tasks are entered, an assessment was made of the three task-related ASAT modules of Collective, Individual, and Drill. This analysis is described in appendix E.

BDM's assessment corroborated the earlier Armor School and ATSC conclusion. The Individual Task module was selected as the module of ASAT Version 2.0 most capable of accommodating brigade BF FA component information. This decision was based on the

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[5] The four functional modules listed were contained in ASAT Versions 2.0 and 3.1, which was the ASAT software used during this research effort. Future ASAT versions and software may include additional functional modules.

Individual Task module's ability to contain and portray information with multiple levels of indenture similar to the structure of brigade BF FA components. Appendix E describes the analysis and an example on the need to select an ASAT module which allows multiple levels of indenture.

<u>Structuring Brigade BF FA Components Into the ASAT Individual Task Module</u>

An analysis was then performed to determine how to portray or "fit" each brigade BF FA component into the Individual Task module in a manner that would be useful to unit trainers. This analysis was jointly performed by BDM, the Armor School, and ATSC in order to benefit from the earlier experience of formatting Bn TF BF FAs into ASAT.

Before describing the analysis performed to match brigade BF FA components to satisfy Individual Task Module requirements, it is necessary to understand that the software parameters of ASAT modules, in the context of this report, dictate how information is displayed. These parameters establish where BF FA information is entered within each ASAT module. The parameters for the Individual Task module, as well as for the Collective Task and Drill Task modules, require information to be organized in three categories or fields. Each of these ASAT fields provides specific information relevant to a particular aspect of the performance of a task. These three fields and their purpose in ASAT are:

- <u>Conditions</u>. This field is designed to contain "information on the situation or environment in which the unit or individual is to perform the task. The condition expands on the information in the task title by identifying when, where, and why the unit or soldier performs the task and what materials, personnel, and equipment the soldier must have to perform the task" (DA, 1995).

- <u>Standards</u>. This field is designed to state the "criteria for how well a task must be performed. The standard specifies how well, completely, or accurately a process must be performed. The task standard reflects task performance requirements that a unit or individual must achieve to successfully execute the task" (DA, 1995).

- <u>Training Evaluation Outline/Performance Steps (Task Steps)</u>. This field is designed to provide the subtask and task element level of detail to a task. It is in this field that the task is described in such a manner that performance is measurable and that specific activities which contribute to the accomplishment of encompassing missions or other requirements are delineated.

An analysis was performed to determine which brigade BF FA components contained information consistent with the purpose and definition of each of these fields. The result of this analysis, organized by ASAT Individual Task module field follows.

- <u>Conditions field</u>. The Key Inputs portion of the "Key Inputs and Outputs" subcomponent could be incorporated in the conditions field without losing its integrity while supporting the purpose and intent of the conditions field.

- Standards field. The "Purpose and Outcomes" subcomponent and the Key Outputs portion of the Key Inputs and Outputs subcomponent could fit the standards field without losing their integrity while supporting the purpose and intent of the standards field.

- Training Evaluation Outline/Performance Steps (Task Steps) field. Five separate BF FA subcomponents could be integrated into this field without losing their internal integrity while supporting the purpose and intent of this field. They are: Task List, Tasks Linked to Other BFs/Units, Key Participants, Lessons Learned Integrated into the Task List, and Gate Tasks.

The foregoing means that it is possible to match 7 of the 17 brigade BF FA components and subcomponents to one of the ASAT Individual Task module's three fields, although it was necessary to separate the BF FA Key Inputs and Outputs subcomponent into two segments.

That also means that 10 of the 17 brigade BF FA components and subcomponents could not be fit into the ASAT Individual Task module fields based on the inability to match the information contained in these BF FA components with the parameters of the Individual Task modules' three fields. Those brigade BF FA components which could not be entered into existing ASAT software were:

- Overview

- User's Guide

- Flow Chart[6]

- Task List Summary

- Tasks Organized by Outcomes

- References

- Acronyms and Abbreviations

- Index of BFs

- Structure of BFs

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[6] Through coordination with ATSC it was determined that flow charts, when digitized in the form of bitmap graphic files, could be linked to individual ASAT tasks. This linkage, however, is contained in the ASAT as part of the relational database and is not directly entered into the ASAT software as information. Therefore, it was determined that the flow charts could not be manually entered into existing ASAT software as separate BF FA components.

- BFs Listed by Echelon

Figure 1 summarizes the compatibility of brigade BF FA components and subcomponents to the ASAT Individual Task module fields based on this analysis.

BF FA COMPONENTS	FORMATTED IN ASAT INDIVIDUAL TASK MODULE FIELDS			NOT FORMATTED IN ASAT DURING THIS RESEARCH [*]
	Conditions	Standards	Task Steps	
Overview				X
User's Guide				X
Purpose and Outcomes		X		
Flow Chart				X
Task Linkages to Other BFs/Units			X	
Key Participants by Task			X	
Key Inputs and Outputs	X (Inputs)	X (Outputs)		
Task List Summary				X
Task List			X	
Tasks Organized by Outcomes				X
Lessons Learned Integrated			X	
Gate Tasks			X	
References				X
Acronyms and Abbreviations				X

Figure 1 (<u>continued</u>)

Index of BFs				X
Structure of BFs				X
BFs Listed by Echelon				X

*NOTE: Indicates those BF FA components which BDM determined could not be matched or fitted into existing ASAT Individual or Collective Task Module fields.

Figure 1. Compatibility of Brigade BF FA Components and Subcomponents to the ASAT Individual Task Module.

ASAT Formatting Test of a Brigade BF FA

Having determined, in theory, how best to organize brigade BF FA components and subcomponents into ASAT so that they would be useful to unit trainers, it was necessary to test the theory and the utility of the result before committing time and resources to enter all BF FAs into ASAT. A single brigade BF FA was selected to be initially formatted into ASAT Version 2.0, the ASAT software fielded during the test period. The initial draft FA for brigade BF 1, "Conduct Intelligence Planning" (Bartkoski, Harrison, & Filey, in press), was selected for the test.

The formatting of the FA for brigade BF 1, 'Conduct Intelligence Planning' (Bartkoski et al., in press) in ASAT was performed from late August to mid September 1995. Coordination with ATSC was maintained throughout the formatting process to ensure ASAT software was correctly used and to exchange lessons learned during ATSC's and the Armor School's efforts to format the Bn TF BF FAs. BDM personnel were trained on the ASAT Version 2.0 software by ATSC. The train-up process and the manual entry of the FA for brigade BF 1 consumed approximately 2 1/2 weeks. A set of instructions was developed by BDM to guide in the formatting of the FA for brigade BF 1 (see appendix C).

Results of Test to Format a Brigade BF FA in ASAT

At the completion of the ASAT formatting process for the initial test, the FA for BF 1 produced in an ASAT structure was appraised with two conclusions. First, the process did format 7 of the 17 BF FA components and subcomponents into ASAT, as expected. Second, although these seven components and subcomponents could be formatted in ASAT, the resulting incomplete BF FA would have limited utility for unit trainers. Based on these two conclusions, it was believed that the ASAT formatting of all seven brigade BF FAs, as originally intended in this research effort, would not add further value.

An in-process review (IPR) was conducted by the ARI Contracting Officer's Representative (COR) at Fort Knox on 12 October 1995. The results of the ASAT formatting of the brigade BF 1 FA and the conclusions reached after analysis on the process for formatting BF

FAs into ASAT were briefed. BDM recommended that additional analysis on the benefit of formatting BFs in ASAT was necessary since the existing software limited the value of formatting a BF FA in ASAT; and that, the capabilities of the new ASAT Version 3.0, scheduled for fielding by ATSC in October 1995, be assessed to determine if it would provide greater software capabilities for the formatting of BFs.

The recommendation was accepted. Approval was also given to reduce the number of BF FAs formatted for ASAT from all seven brigade BF FAs to only the four Intelligence BOS BF FAs (Bartkoski et al., in press). The FAs of the four Intelligence BOS BF were scheduled to be complete in their final form by April 1996. The ARI COR agreed that the formatting of the BF FAs should be done in ASAT Version 3.0 to take advantage of expected improvements in software capabilities.

Final ASAT Formatting of a Brigade BF FA

The ATSC fielded ASAT Version 3.0 in October 1995. Coordination between BDM and ATSC revealed that the ASAT Version 3.0 software was scheduled to be enhanced and fielded in March 1996 as ASAT Version 3.1. Since the ASAT formatting of FAs for the Intelligence BFs was not scheduled to commence until April 1996 (the completion date for the four brigade BF FAs), it was decided that ASAT Version 3.1 should be used for the formatting. Subsequent coordination with ATSC determined that the software improvements in ASAT Version 3.1 would not provide any new capabilities which could enhance the formatting of BF FAs. The entry of information and data was made more user friendly due to the conversion of ASAT Versions 3.0 and 3.1 into a WINDOWS application as the operating environment. However, assessments by BDM and ATSC indicated that the number of brigade BF FA components and subcomponents that could be formatted remained the same as in the ASAT Version 2.0.

After study and coordination with ATSC, it was evident that ASAT Version 3.1 software capabilities could not achieve the goals expected for formatting BF FAs into ASAT. This determination was based on two factors. The first was that ASAT Version 3.1 did not provide additional enhancements in terms of BF FA portrayal over what existed with ASAT Version 2.0. The ASAT BF formatting process already developed remained essentially unchanged. The second factor concerned the utility of the process to format BF FAs into ASAT. Since assessments indicated that the product generated by ASAT of a brigade BF FA was confusing and of questionable value based on existing ASAT software, the further investment of time to format brigade BF FAs would not provide new information or lessons learned relevant to the formatting process or the utility of ASAT to portray BF FAs.

Based on the determination that ASAT Version 3.1 provided limited improvements from ASAT Version 2.0, BDM concluded that the entry of the four Intelligence BOS BF FAs into ASAT would not achieve the desired results specified in the Project Research Plan. In May 1996 the ARI COR was informed of this assessment. The ARI COR concurred and modified the BF FA ASAT formatting requirement and directed that only one of the Intelligence BOS BF FAs be formatted in ASAT in order to demonstrate the process used to format a BF FA in ASAT and to provide an example of a BF FA formatted in ASAT.

A single adjustment in the process of entering brigade BF FAs into ASAT, however, was made based on new ASAT Version 3.1 capabilities. During the test in August-September 1995, the FA for brigade BF 1 was formatted using the Individual Task module because the levels of indenture allowed for a more realistic portrayal of information. In ASAT Version 3.1, the Collective Task module was upgraded by ATSC to allow multiple levels of indenture for information entry. To take advantage of this improvement and capture the BF FAs' portrayal of collective interactions between staffs and units, the ASAT Version 3.1 Collective Task module was selected in lieu of the Individual Task Module used earlier for the entry of BF FA information.

The FA for brigade BF 1 was again selected for the new demonstration since it had been formatted in the first test in August-September 1995. The FA for brigade BF 1 had been refined, as described above, into its final form in April 1996. In June 1996 this final version of the FA for brigade BF 1 was entered into ASAT Version 3.1. The instructions developed by BDM for ASAT formatting were updated to include the ASAT formatting of the FA for brigade BF 1; these final instructions are contained in appendix C. The ASAT product (e.g., output) of the brigade BF 1 FA is contained in appendix D.

Assessments on Results of BF FA ASAT Formatting

This section describes BDM's analysis of the results of the research into the formatting of BF FAs into ASAT. Assessments were made on the value to unit trainers of the BF FA components which could be formatted into ASAT during this effort as well as what value may be lost to unit trainers by not being able to use ASAT to format BF FA components. This section also reports the technical solutions related to the formatting of the BF FAs as developed by the Armor School's Training and Doctrine Development Directorate (Armstrong, personal communication, September, 1996).

BF FA Components Formatted in ASAT

The first test in August-September 1995 and the subsequent entry in ASAT of the final version of the brigade BF 1 FA demonstrated that those seven BF FA components and subcomponents listed in figure 1 above could be formatted into ASAT. As described earlier, it was necessary to reorganize and structure BF FA subcomponents to fit the purpose of the three ASAT module fields (i.e., Conditions, Standards, Training Evaluation Outline/Performance Steps [Task Steps]). In other words, to format a BF FA in ASAT it was necessary to match BF FA subcomponents to the task module fields in which they best fit. The product generated in ASAT of the FA for brigade BF 1, as contained in appendix D, illustrates how each BF FA subcomponent must be organized in accordance with the ASAT Version 3.1 Collective Task module fields.

This process of matching of BF FA subcomponents to support each ASAT field, however, resulted in the BF FAs losing their integrity as a complete analysis of a specific aspect of the BF. In order to describe what is lost by molding BF FA subcomponents to specific ASAT

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module fields, the integration of BF FA subcomponent information into each of the three fields is addressed below:

- Conditions field. This field contains the Key Inputs portion of the Key Inputs and Outputs subcomponent of a BF FA. Key Inputs for a BF FA lists information in the form of doctrinal products (e.g., OPORDs, SITREPs) or guidance and information. When viewed in ASAT the user will become confused on how this Key Input information corresponds to the conditions of the task. The ASAT user, expecting to determine a specific set of conditions for a given task, will instead be provided a listing of doctrinal products and information relevant to the entire BF.

- Standards field. This field contains information from the Purpose and Outcomes subcomponent and the Key Outputs section of the Key Inputs and Outputs subcomponent. These two BF FA subcomponents are designed to provide unique information relevant to a specific aspect of the BF, but when contained in the standards field of a task their contribution to the task will be incoherent and confusing. The merging of information from both subcomponents into a single field results in the presentation of information in such a manner that these two subcomponents could not be readily used for their intended purposes. Additionally, the ASAT user, expecting to be provided a specific set of measurable standards for a given task, will instead be provided the information contained in these two BF FA subcomponents.

- Training Evaluation Outline/Performance Steps (Task Steps) field. The five BF FA subcomponents matched to this field are: Task List; Task Linkages to Other BFs/Units; Key Participants by Task; Lessons Learned Integrated into the Task List; and Gate Tasks. In order to enter these five subcomponents into this field, it was necessary to select and use the "Task List" subcomponent as the primary framework for information portrayal. The information contained in the remaining four subcomponents (i.e., Tasks Linked to Other BFs/Units, Key Participants, Lessons Learned Integrated into the Task List, Gate Tasks) had to be reorganized and matched to each task in the Task List, resulting in all four subcomponents losing their integrity as complete sources of information for a specific aspect of a BF. By merging the information from all five subcomponents into this field, it is no longer possible for each subcomponent to be used for its intended purpose. Also the ASAT user, expecting to access only task steps, will be provided a mix of information from five separate BF FA subcomponents.

These seven subcomponents of a BF FA can be entered into ASAT. However, their use in ASAT seems of questionable benefit, especially to unit trainers. The information in these BF FA subcomponents is entered into ASAT module fields which, when accessed, do not completely portray their relevance to the BF and the other BF FA subcomponents. Hence, the ability to provide unique information is restricted. As a complete analysis of a function for a unit, the BF FA, when formatted into existing ASAT software, does not provide the complete functional analysis required of unit trainers to plan and assess training.

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As indicated previously, figure 1 lists the 10 components and subcomponents which could not be formatted in ASAT Version 3.1 during this research effort. Missing BF FA information that would not affect ASAT is also provided.

- <u>Overview</u>. The ASAT user will not be provided a full understanding of the scope and emphasis of the research process used to develop the BF FA.

- <u>User's Guide</u>. The ASAT user will not have access to the relevant information on how to utilize BF FA information to achieve a variety of purposes.

- <u>Flow Chart</u>. When converted to bitmaps and related to ASAT tasks as a part of the ASAT relational database, ASAT users do have the ability to link to the BF flow charts. However, the flow charts can not be used independently to sequence tasks for planning or assessing training.

- <u>Task List Summary.</u> The ASAT user will be unable to use this component as a tool to retain cognizance on the major tasks contained in the BF. Although it is possible for an ASAT user to gain this information by referring to the task list component which can be formatted in ASAT task step field, the user will be required to sort through the information from five separate BF FA components contained in the task step field in order to identify just the major tasks.

- <u>Tasks Organized by Outcomes.</u> The ASAT user is unable to utilize the Functional Approach to Training methodology since a single source of information which depicts tasks organized by outcomes is not available. The ASAT relational database can provide this capability but it requires the ASAT user to structure the linkages.

- <u>References.</u> BF FA components are developed from multiple doctrinal sources, whereas an ASAT task is generally based on a single or limited number of sources. When using the BF FA, the ASAT user may wish to review the sources for BF FA information in order to gain a clearer understanding. This capability is reduced in ASAT.

- <u>Acronyms and Abbreviations.</u> ARTEP-MTP, STP, and Drill tasks in ASAT contain numerous acronyms which are not defined. Definitions are not provided under the premise that since the ASAT user accessed a specific task, there is sufficient familiarity with the task to understand any acronyms and abbreviations. However, since the BF FA contains more than just a single task and is developed from multiple doctrinal sources, an ASAT user of the BF FA may be unfamiliar with the acronyms and abbreviations used. Without the inclusion of this component, ASAT users may be required to research other doctrinal sources to find the acronyms or abbreviations.

- <u>Index of BF.</u> The loss of this component could result in the ASAT users misinterpreting the relationships between BFs and the BOS.

- <u>Structure of BFs.</u> The absence of this component might cause an ASAT user to miss necessary insights on the scope and definition of each BF and BOS.

- <u>BFs Listed by Echelons.</u> Although this component is useful in a BF FA, its presence in ASAT is not necessary.

<u>Alternative Techniques to ASAT Format BF FA Components</u>

The Armor School has been involved for some time in formatting Bn TF BF FAs. The Armor School's experience and expertise in the use of ASAT resulted in the identification of technical solutions to the ASAT formatting of selected BF FA components and subcomponents not known to BDM during the effort to format the brigade BF FA into ASAT.

In its September 1996 review of the earlier version of the report on the experiment to format brigade BF FAs, the Armor School identified technical solutions (Armstrong, personal communication, September, 1996) which allow 6 of the remaining 10 components and subcomponents to be formatted into ASAT. Listed below are those technical solutions.

- <u>Flow Charts.</u> "The flow charts can be included in ASAT. Several types of graphic files can be linked at either the whole task or task step level. The flow chart for the BF could be linked at the task level and printed as part of a T&EO. The graphics could be accessed independently of task data by simply going directly to the graphics directory."

- <u>References</u>. "References can be shown in ASAT at either the whole task or task step level by simply linking to the supporting references in a user-generated support table. The in-development Doctrine Module will allow ASAT users to hyperlink to text passages in supporting manuals."

- <u>Acronyms and Abbreviations.</u> "An acronym list and glossary for a group of BFs can be generated quickly using the ASAT MTP Wizard."

- <u>Index of BFs.</u> "The 'Index of BFs' could be generated easily by filtering the task inventory on a user category (e.g., BFs) or proponent (e.g., ARI) and sorting the task grid by BOS. The user could then print the task grid and get an index of all BFs sorted by BOS."

- <u>Structure of BFs</u>. "Part of the 'Structure of BF' can be captured in ASAT by linking the BFs to the BOSs from the task data screen."

- <u>BFs Listed by Echelons.</u> ". . . can be captured in ASAT by linking applicable elements to a BF from the task data screen or by linking in reverse from elements support table. A reprot-generation software, such as InfoMaker, could be used to make a matrix like the one shown in the Brigade BFs."

These technical solutions expand the potential utility of BF FA access through ASAT beyond that identified by BDM. These technical solutions require the ASAT user to be skilled and proficient in the use of ASAT as well as in the application of other computer software applications. Training developers and others who have a high level of proficiency should be able to apply these technical solutions. The nature of these technical solutions suggests that more components and subcomponents of BF FAs than envisioned earlier may be accessible to ASAT users.

Summary

Throughout this research effort, ATSC and the Armor School provided significant assistance and support. The experience gained by ATSC and the Armor School during the formatting of the 24 Bn TF BF FAs was extensive. The first effort to format a product not in the form of an ARTEP-MTP, STP, or Drill task, provided valuable insights on processes and procedures critical to this research effort. Working in collaboration with ATSC and the Armor School, BDM was able to analyze the use of ASAT to determine its present ability to format brigade BF FAs in a manner useful to unit trainers. This analysis was necessary to achieve the long-term vision of providing all Army users access to the information in BF FAs through the ASAT database.

The ASAT and its database were developed to enhance task management and standardize a common task database. To support task management, existing ASAT software requires that information be organized in the form of tasks, as contained in ARTEP-MTPs and STPs. Based on this, the first significant finding of this research effort was that ASAT is restrictive since ASAT information must be organized in the form of an ARTEP-MTP or STP task, which BF FAs are not. After reviewing the definitions of a task and a BF, it becomes apparent that the two are not compatible. The task is very specific in its scope and can only be described in terms of conditions, standards, and task steps. Conversely, the BF FA incorporates and describes a greater span of information because of its focus on performance of functions within the BOS. It is this expansive array of detail, defined through the distinct but related components of a BF FA, which is lost when formatted into the restrictive structure of ASAT.

Another significant finding of this research effort is that, after equating a BF FA to an ARTEP-MTP or STP task in order to continue the research, it was necessary to reorganize BF FA information to fit into the ASAT task modules' three fields (i.e., Conditions, Standards, Training Evaluation Outline/Performance Steps [Task Steps]). By doing this, the purpose and intent of each BF FA component is lost and therefore, a complete analysis of a function, in the form of a BF FA, would not be available to ASAT users. Also, depending on the technical skill and expertise of the ASAT user, 4 to 10 of the 17 BF FA components cannot be organized in a convenient manner to fit into the existing ASAT fields.

The Armor School provided valuable insights on the use of ASAT for the formatting of BF FA information. The skill and expertise, gained from their extensive use of ASAT, allowed them to identify alternative technical solutions for formatting BF FA components not identified

during this research effort. Although these technical solutions require the ASAT user to have a high level of proficiency with ASAT, the Armor School has demonstrated that BF FAs formatted in the current ASAT software version may be useful to those with expertise in ASAT.

Conclusion

Since BFs span the entire Army spectrum of echelons and type units, the inclusion of BF FAs in ASAT can contribute to the Army training community. The emphasis of this research effort was to consider how ASAT could be employed by users to easily access BF FA components, subcomponents, and information. Specifically, the primary consideration was the ability of ASAT to support unit trainers in the field using BF FAs. In order for BF FAs in ASAT to add value for unit trainers, the ASAT database must be populated in such a manner as to make the BF FA both easily accessible and understandable to unit personnel.

This research effort has demonstrated that selected BF FA components and subcomponents can be formatted in ASAT. The results of this research effort, when coupled with the technical solutions identified by the Armor School which allows other selected BF FA components to be ASAT formatted, suggests that it is possible to enter the majority of a BF FA into ASAT. However, the current ASAT software does not allow BF FAs to be formatted in a manner which is both easily accessible and understandable to unit personnel.

To assess BF FA usability to any ASAT user, it is necessary to consider the technical skills and expertise potential users are likely to have with ASAT. Expertise on the use of ASAT will vary between users. Army training developers, for example, who use ASAT on a frequent basis for the development of doctrine, will have a great degree of expertise with ASAT. However, unit trainers in the field, such as commanders and unit staff members, may not have this level of expertise.

The data identified by a BF FA is now presented on paper in book form. Although a cumbersome process, it is relatively easy to move from component to component while keeping all the other information readily available for cross reference. However, because of the level of information in some components and subcomponents, especially the task list, it is not particularly easy to work with the data. Nor is it convenient to simultaneously cross reference to other BF FA components and subcomponents while in ASAT. These inconveniences multiply if the user is working with more than one BF FA. It is our assessment that it is doubtful that a BF FA in ASAT will benefit users in the field and others who lack a high level of expertise with ASAT. As currently designed, ASAT will not reproduce BF FAs so as to be useful to unit trainers.

Automation is necessary to permit exploitation of the information about combined arms operations identified through the functional approach and compiled in the BF FA. However, automation in ASAT, as experienced during this effort, did not result in the hoped for improvement in utility over the original paper-based form of the BF FA.

Our conclusion is that it would be more beneficial to provide the user with the complete version of a BF FA in ASAT instead of expecting the ASAT user to employ technical solutions requiring the manipulation of the ASAT software or the employment other software programs to supplement ASAT capabilities. This conclusion is based on the concern about whether the technical solutions identified above can be used and applied by unit trainers seeking to extract information to apply to their specific information requirements. Of equal concern is the need to identify a process or other technical solutions that will allow the remaining four BF FA components and subcomponent (e.g., Overview, User's Guide, Task List Summary, Tasks Organized by Outcomes) to be entered into ASAT.

The utility of BF FAs in ASAT for training developers is expected to be greater than that for unit trainers. Training developers will have achieved a higher level of proficiency with ASAT gained from frequent use and experimentation. It is expected that training developers will be able to utilize ASAT's software features and employ other software programs to enhance ASAT capabilities in such a manner as to manipulate BF FA information to support their requirements. Based on this premise, the incorporation of BF TA information in ASAT may be of benefit to training developers.

Although this research effort concentrated on the formatting of brigade BF FAs into ASAT, there are other doctrinal publications and sources used by the training community which also cannot be formatted into ASAT because they are not structured in the form of a task as defined by the ASAT modules. Examples of publications and sources which contain information of interest to the training community include take home packages and after action reviews from the U.S. Army Combat Training Centers and Student Texts from TRADOC proponent schools. Additional analysis may be warranted to ensure future ASAT versions have the capability to format all U.S. Army publications and documents.

Based on the results of this research effort, three recommendations are made for enhancement of ASAT software to allow the BF FAs to be formatted in ASAT in a form useful for unit trainers. These recommendations are the capabilities of ASAT Version 3.1, the software currently available.

- Create a new ASAT module to contain BF FAs and other training documents which are not organized in the form of an ARTEP-MTP, Drill, or STP task. This module should be structured in such a way that the user can establish multiple fields for the entry of information. The capability to relate information contained in these fields to existing information contained in the four other ASAT modules should be included. This would allow the BF FA to be entered as a function instead of as a task and would also allow all BF FA components and subcomponents to be entered into ASAT.

- Expand the number of indentures available in the three task-oriented ASAT modules (i.e., Individual Task, Collective Task, Drill Task). Currently, only a limited number of indentures can be made. Due to their level of detail, tasks contained in BF FAs contain more levels of task elements and subtasks than existing ARTEP-MTP, STP,

and Drill tasks. This expansion would enhance the flexibility of ASAT modules and allow the development of tasks with a greater level of detail.

- Provide the capability to electronically transfer information into ASAT for the development of modules. During this research effort, BF FA information had to be manually entered into ASAT, although the information was available electronically in WordPerfect. Manual entry of information into ASAT is time-consuming and potentially could limit the use of ASAT by the training community.

Ongoing enhancements to ASAT software associated with the development of ASAT Version 4.0, scheduled for fielding in April 1997, may provide capabilities which support these recommendations. The planned inclusion of a Doctrine Module, and possibly a Course Module, in ASAT Version 4.0 may support the incorporation and formatting of all BF FA components and subcomponents.

Appendix A

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Appendix B

Acronyms and Abbreviations

ARI............................Army Research Institute
ARTEP......................
ASAT.........................Automated Systems Approach to Training
ATSC ....Army Training Support Center

BF.............................Battlefield Function
Bn TF ....Battalion Task Force
BOS...........................Battlefield Operating System

CALL ....Center for Army Lessons Learned
CATA.........................Combined Arms Training Activity
CCF...........................Critical Combat Function
COR ....Contracting Officer's Representative
CS.............................Combat Support
CSS ....Combat Service Support

DOS...........................

FA ....Function Analysis
FXXITP......................Force XXI Training Program

IPR ....In-Process Review

MTP ....

SATS.........................Standard Army Training System
STP............................

T&EO.........................Training and Evaluation Outline
TA ....Task Analysis
TOE............................Table of Organization and Equipment
TRADOC ....Training and Doctrine Command
TTP ....Tactics, Techniques, and Procedures

Appendix C

ENTERING BATTLEFIELD FUNCTIONS INTO THE AUTOMATED SYSTEMS APPROACH TO TRAINING (ASAT) 3.1 (WINDOWS) RELATIONAL DATABASE

DATA LOADING GUIDE

INTRODUCTION

The Automated Systems Approach to Training (ASAT) is a management and information system which provides total task management and creation capability. ASAT Version 3.1 for the Windows environment is a standardized training development and support delivery system. The ASAT software application supports Army training development and management functions. ASAT operates as a training information system, a tool for decision making, and a training product production system.

As a production system, ASAT can produce the Training and Evaluation Outlines and the training matrices as they are published in the Army Training and Evaluation Program Mission Training Plans (ARTEP-MTPs). In addition, ASAT can produce Soldier's Manuals (SMs), Officer Foundation Standards, and Training Circulars (TCs). The software documents both individual and collective task information against tables of organization and equipment (TOE), type unit, mission, echelon, Battlefield Operating Systems (BOS), Military Occupational Specialties (MOS), military professional development courses, safety and environmental factors, and supporting products (TADSS). ASAT provides on-line capability to revise training products, e.g. ARTEP-MTPs, TCs and SMs. ASAT is integrated with the Automated Instructional Management System - Redesign (AIMS-R) and the Standard Army Training System (SATS).

ASAT Version 3.1 provides object-oriented standardized windows execution and an on-line editor with relational capability to support individual and collective authoring of task steps and performance measures. It also supports linking of all information at the task and task step levels. ASAT Version 3.1 software has been sent to the field with the total Army task training base on CD-ROM.

The Battlefield Functions (BFs) provide a means for examining critical battlefield functions and their relationships in terms of essential inputs and outputs, key participants, and the interrelationships of team members and their tasks. The BFs, in conjunction with U.S. Army Training and Doctrine Command (TRADOC) Pamphlet 11-9, "Blueprint of the Battlefield" and the seven BOSs, describe battlefield activities in terms of the relationships of key participants, tasks, and inter and intra echelons. The integration of the BF Function Analyses (FAs) into

ASAT will provide linkage to the broad spectrum of Army task information that exists within the ASAT environment. It will also serve to promote the use of the BF FAs as reference documents throughout the military user community.

BACKGROUND

To support the entry and formatting of a brigade BF FA into ASAT, a guide in the form of a set of instructions was developed. Since BF FAs were the first product formatted into ASAT structured differently from ARTEP-MTP and STP type tasks, the embedded help function in ASAT software did not provide the necessary information required to enter the BF FA components.

The set of instructions was first developed by BDM Federal, in coordination with the U.S. Army Training Support Center (ATSC), in August 1995 to support the first test of formatting the brigade BF 1 FA. This set of instructions provided relevant details for manually entering and formatting a BF FA into ASAT Version 2.0 using the Individual Task module.

The set of instructions was updated in May-June 1996 to support the ASAT formatting of the final version of the brigade BF 1 FA in June 1996. The updated set of instructions was required based on the fielding of ASAT Version 3.1 in late March 1996 and the decision to use the Collective Task module vise the Individual Task module for the ASAT formatting of BF FAs. This appendix provides the set of instructions developed for the formatting of the brigade BF 1 FA in ASAT Version 3.1 in June 1996.

OBJECTIVE

The primary purpose of this document is to provide a general description of the procedures for integrating the BF FAs into the ASAT Version 3.1 Management and Information System. This document is intended to serve as a tool for others while navigating through the ASAT system of menus and entering BF data into the ASAT system. A BF FA is considered a collective task in the ASAT environment.

TECHNICAL OVERVIEW AND APPROACH

The following steps provide an overview for the integration of BF data into the ASAT System:

1.   Create a **Collective Task Record** to hold BF data.

      a.   Within the ASAT 3.1 window, click the **Quick Access tool bar button**, in the Quick Access window click the **Collective Task radial button** and enter the new collective task number (e.g., 878-BDE-BF-1), click the select button;

b. Fill in the following related data on the **Task Data Tab**:

 (1) **Task**: Conduct Intelligence Planning (Brigade BF 1)

 (2) **Type**: Combat Function

 (3) **MOPP**: Never

 (4) **Night Vision**: No

c. Save the record.

2. Within the Collective Task Record, click on the **Condition Tab** and enter the Key Inputs for the appropriate BF.

3. Within the Collective Task Record, click on the **Standard Tab** and enter the Purpose, Outcomes and Key Outputs for the appropriate BF.

4. Click on the **Outline button** on the tool bar and enter the Task List for the appropriate BF. Insert Key Participants, Lessons Learned, Gate Tasks and Task Linkages for each task step in the Task List. The **ASAT Outline Editor** includes a hierarchical outline feature which will support the indentation pattern found in the Battlefield Functions. The **Outline tool bar** provides quick access to frequently used Outline Editor functions.

5. Link the Collective Task record to the list of other BFs by clicking on the **MTP/Unit Type Tab**. Click on **View All** , double click on **ARTEP 71-BF-MTP, Battlefield Functions**.

Appendix D

Automated Systems Approach to Training (ASAT) Formatting of Brigade Battlefield Function (BF) 1 Function Analysis (FA)

ELEMENT:

TASK: Conduct Intelligence Planning (878-BDE-CCF-1)

ITERATION:	1	2	3	4	5	(Circle)
COMMANDER/LEADER ASSESSMENT:		T	P	U		(Circle)

CONDITIONS: KEY INPUTS

D - 1   DIVISION WARNING ORDER

    a. Division commander's mission, intent, and critical information requirements (CCIR).

    b. Area of operations.

    c. Enemy situation.

    d. Task organization.

D - 2   DIVISION OPORD

    a. Five paragraph order.

        1) Corps commander's intent.

        2) Division commander's intent.

        3) Division commander's CCIR.

        4) Concept of the operation.

            a) Maneuver.

            b) Fires.

            c) Intelligence.

            d) Electronic warfare (EW).

            e) Deception.

        5) Priority intelligence requirements (PIR), essential elements of friendly information (EEFI), friendly forces information requirements (FFIR).

        6) Rehearsal/backbrief timelines.

    b. Task organization annex.

c. Intelligence annex with graphics/overlays.

   1) Situation template.

   2) Modified combined obstacle overlay (MCOO).

   3) Event template.

   4) Named areas of interest (NAI), target areas of interest (TAI).

   5) PIR.

   6) Intelligence acquisition tasks.

   7) Measures for handling personnel, documents, and material.

   8) Assets available for collection of information and intelligence.

   9) Collection plan.

d. Operations overlays/concept of operation.

   1) Graphics.

   2) Mission timelines.

   3) Decision support template (DST), synchronization matrix.

e. Fire support annex.

   1) Commander's guidance for fire support.

   2) Concept of fires.

   3) Offensive EW.

   4) Target acquisition.

   5) High payoff targets (HPT).

f. Engineer annex.

   1) Scheme of engineer operations.

   2) Linkage of obstacle plan to maneuver scheme.

   3) Division directed obstacle, obstacle priority, and responsibilities.

g. Service support plan/annex.

   1) Service plan.

   2) Civil-military cooperation (CIMIC).

h. Army aviation annex.

    1) Aviation concept of operation.

    2) Suppression of enemy air defense (SEAD).

i. Air defense annex.

    1) Concept of air defense operations.

    2) Active air defense guidance.

    3) Passive air defense guidance.

    4) Weapons control status.

    5) Air defense warning system.

j. Electronic warfare annex.

    1) Concept of operation (offensive and defensive).

    2) Tasks to subordinate and supporting units.

    3) Coordinating instructions.

k. Army airspace command and control (A2C2) annex.

    1) Commander's guidance for A2C2.

    2) Friendly and hostile aircraft data.

    3) Restricted areas.

l. Signal operations annex.

    1) Concept of signal operations (including priorities).

    2) Coordinating instructions.

m. Operations security (OPSEC) annex.

    1) Enemy capabilities.

    2) Concepts of OPSEC.

    3) Tasks to subordinate units.

    4) Countermeasures.

    5) Counterintelligence operations.

6) Coordinating instructions.

n. Deception annex.

   1) Concept of deception operations (including the deception story).

   2) Tasks to subordinate and supporting units.

   3) Coordinating instructions.

o. Psychological operations (PSYOPS) annex.

p. Nuclear, biological, chemical (NBC) defense operations annex/graphics.

   1) Enemy NBC capabilities.

   2) Known/suspected contaminated areas.

   3) Operational exposure guidance (OEG).

   4) Mission-oriented protective posture (MOPP) guidance.

   5) Decontamination sites.

q. Civil affairs annex.

   1) Concept for civil affairs (including priorities).

   2) Civil affairs tasks to subordinate and supporting units.

   3) Coordinating instructions.

r. Movements annex.

   1) MSRs.

   2) Routes and schedules.

s. Military police annex.

   1) Concept of military police operations (including priorities).

   2) Tasks to subordinate units.

   3) Coordinating instructions.

      a) Coordination and cooperation with civil authorities.

      b) Enemy prisoner of war (EPW) operations.

t. Rear operations annex.

   1) Enemy threat (capabilities and levels).

2) Tasks to subordinate and supporting units.

3) Coordinating instructions.

    a) RACO and ADC.

    b) Civil-military.

D-3   DIVISION TACTICAL STANDARD OPERATING PROCEDURES (TSOP)

a. Battle command procedures.

    1) Orders and plans.

    2) CP communications.

    3) Reports.

b. Control Procedures.

    1) Brevity codes.

    2) Terrain index reference system.

    3) Recognition techniques.

    4) Signals.

    5) Alarms and warnings.

    6) Fixed call signs.

c. Intelligence and security procedures.

    1) General guidance.

    2) NAI/TAI procedures.

    3) EPW procedures.

    4) Captured document and equipment procedures.

D - 4   GUIDANCE AND INFORMATION FROM THE DIVISION COMMANDER AND STAFF

a. Intelligence reports.

b. Commander's situation report (SITREP).

c. Spot reports.

d. Intelligence database.

BDE-1 BRIGADE TACTICAL STANDING OPERATING PROCEDURES (TSOP)

a. Battle command procedures.

    1) Orders and plans.

    2) CP communications.

    3) Reports.

b. Control Procedures.

    1) Brevity codes.

    2) Terrain index reference system.

    3) Recognition techniques.

    4) Signals.

    5) Alarms and warnings.

    6) Fixed call signs.

c. Tactical movements procedures.

d. Assembly area occupation procedures.

e. Other tactical operations procedures.

    1) Link-up operations.

    2) Relief-in-place.

    3) Forward passage of lines.

    4) Rearward passage of lines.

    5) River crossing.

f. Air defense procedures.

    1) Local air defense warnings.

    2) Weapons control status/guidance.

    3) Forward passage of lines.

    4) Rearward passage of lines.

    5) River crossing.

g. A2C2 procedures.

h. Signal procedures.

i. Intelligence and security procedures.

    1) General guidance.

    2) NAI/TAI procedures.

    3) Document security.

    4) Personnel security.

    5) EPW procedures.

    6) Captured document and equipment procedures.

j. NBC procedures.

    1) MOPP guidance

    2) Alarms and warnings.

    3) Reporting and marking procedures.

k. Engineer procedures.

    1) Scatterable mines.

    2) Mobility.

    3) Standard obstacles.

l. Fire support procedures.

    1) Target numbering.

    2) Laser code assignments.

m. Civil-military operations procedures.

BDE-2 REPORTS AND INFORMATION FROM BRIGADE ELEMENTS AND OTHER UNITS

a. Spot reports

b. Commander's situation reports.

c. Intelligence reports.

d. Engineer reports.

e. Patrol reports.

f. EPW or captured materials reports.

g. Shell reports.

h. Splash reports.

i. NBC reports.

j. Intelligence database.

TASK STANDARDS:

PURPOSE AND OUTCOMES

   PURPOSE

      To begin, focus and continuously update or refocus the intelligence preparation of the
      battlefield (IPB) effort; gain and maintain understanding of the battlefield and area of
      interest; identify the enemy, knowledge gaps, and uncertainties.

   OUTCOMES
      1. Timely and accurate intelligence input to the commander and staff.

      2. Doctrinally complete and timely intelligence products that are integrated and
      coordinated and that enable the commander to be more precise in attacking the enemy.

KEY OUTPUTS

BDE-3 BRIGADE WARNING ORDER

   a. CCIR of brigade commander.

   b. Enemy situation and supporting graphics.

   c. Assets available for collection of information and intelligence.

   d. Task organization.

BDE-4 BRIGADE OPORD

   a. Portions of the five-paragraph operations order:

      1) Para 1. Situation, a. Enemy forces.

      2) Para 3. Execution,

         a) Concept of operation, (4) intelligence and (5) EW.

         b) Tasks to maneuver units - intelligence collection taskings.

         c) Tasks to combat support units - intelligence collection taskings.

         d) Coordinating instructions, (2) CCIR

b. The brigade collection plan and Intelligence annex with graphics/overlays.

   1) Situation template.

   2) Modified combined obstacle overlay (MCOO).

   3) Event template.

   4) Named areas of interest (NAI), target areas of interest (TAI).

   5) CCIR, PIR, and IR.

   6) Intelligence acquisition tasks.

   7) Measures for handling personnel, documents, and material.

   8) Assets available for collection of information and intelligence.

c. Intelligence input to the operations overlays/concept of operation.

   1) Graphics.

   2) Decision support template (DST), synchronization matrix.

d. Intelligence information coordinated with, provided to, and exchanged with the brigade primary and supporting staff to be used in developing their annexes, as appropriate.

TASK STEPS AND PERFORMANCE MEASURES	GO	NO GO

1. **The brigade S2 section begins the intelligence preparation of the battlefield (IPB) process upon receipt of the mission.** [ARTEP 71-3 MTP, Tasks 71-3-2001].

   • KEY PARTICIPANTS BY TASK / TASK 1

   Brigade (Bde) commander (CDR), S2, S2 section, senior (SR) INTEL NCO, DS MI company Co) CDR, S3, S3 section, fire support officer (FSO), chemical officer (CHEMO), nuclear, biological and chemical (NBC) NCO, assistant (ASST) brigade engineer (ABE), air defense artillery (ADA), liaison (LNO), Army aviation (AVN) LNO, air liaison officer (ALO), S1, S4, brigade signal officer (BSO), air/naval gunfire liaison officer, MP platoon leader

   a. The brigade commander focuses the staff development of the IPB by: [FM 34-8, p. 2-2].

      (1) Providing his initial perception of the upcoming fight.

      (2) Sharing all that he knows about the enemy situation.

      (3) Articulating the critical information he needs to make combat decisions. [FN-BCTP, Intel O/C].

      (4) Providing guidance during brigade staff backbriefs.

   b. The brigade S2 starts the IPB process and the intelligence estimate. [FM 101-5, p. 4-15, 4-74, 4-75; FM 34-8, p. 2-2; ARTEP 71-3 MTP, Task 71-3-2001/12/4/5].

      (1) The brigade S2 evaluates existing databases and identifies intelligence gaps. [FM34-130, p. 2-7].

         (a) The brigade S2 identifies and prioritizes gaps in current holdings.

         (b) The brigade S2 identifies gaps that cannot be filled in the time available.

      (2) The brigade S2 determines the amount of detail that is feasible to develop or acquire within the time available. [FM 34-130, p.2-3].

      (3) The brigade S2 prepares the intelligence estimate before the remainder of the staff completes its estimates. [FM 34-8, p. 2-7].

      (4) The brigade S2 constantly integrates new information into the initial set of facts and assumptions. [FM 101-5, p. 4-51].

      (5) The brigade S2 conducts an initial map or ground reconnaissance of the area of interest. [FM101-5, p. 4-51].

TASK STEPS AND PERFORMANCE MEASURES	GO	NO GO
(6) The brigade S2 develops an intelligence database or defines the existing database using the nine order of battle factors. [ARTEP 71-3 MTP, Task 71-3-2001/2d(1)].		
(7) The brigade S2 sets up an indication and warning tracking mechanism within the S2 section for different threat scenarios ranging from all-out ground attack to chemical attack to air raids. [CALL Newsletter, No. 90-8, p. 1-4].		
c. The brigade S2 assists in staff mission analysis of the division warning order and/or operations order (OPORD). [ARTEP 71-3 MTP, Task 71-3-2001/1; FM 101-5, p. 4-11].		
(1) The brigade S2 identifies information which impacts the intelligence mission and resources.		
(a) The brigade S2 receives the mission and intent of the corps commander. [FM 101-5, p. 4-11].		
(b) The brigade S2 receives the mission and intent of the division commander. [FM 101-5, p. 4-11].		
(c) The brigade S2 determines intelligence-specified tasks and implied tasks. [ARTEP 71-3 MTP, Task 71-3-2001/1a; FM 101-5, P. 4-11].		
(d) The brigade S2 determines tentative intelligence-essential tasks that need to be accomplished to support the operation. [FM 101-5, p. 4-11].		
(e) The brigade S2 identifies available intelligence assets. [FM 101-5, p. 4-11].		
(f) The brigade S2 determines intelligence restrictions and constraints. [FM 101-5, p.4-11].		
(g) The brigade S2 assists the brigade commander and S3 in determining acceptable risk levels. [FM 101-5, p. 4-11].		
(h) The brigade S2 contributes to the critical facts and assumptions determination performed by the brigade staff. [FM101-5, p. 4-11].		
(i) The brigade S2 conducts an intelligence time analysis to prioritize the intelligence requirements (latest time intelligence of value (LTIOV). [FM 101-5, p. 4-11].		
(j) The brigade S2 contributes to the restated mission development as required. [FM 101-5, p. 4-11].		

TASK STEPS AND PERFORMANCE MEASURES	GO	NO GO
(k) The brigade S2 recommends and receives approval for the area of interest (AI) and area of operations (AO) determination. [ARTEP 71-3 MTP, Tasks 71-3-2001/1c/5c(2)].		
(l) The brigade S2 determines specific information requirements. [ARTEP 71-3 MTP, Task 71-3 MTP, 71-3-2005/1].		
(1) The brigade S2 identifies enemy activities and characteristics that will fulfill information requirements.		
(2) The brigade S2 integrates IR into collection plan.		
(3) The brigade S2 develops specific intelligence requirements (SIR).		
(4) The brigade S2 forwards specific intelligence requirements (priority intelligence requirements (PIR) and IR), with LTIOV noted, to the division G2.		
(5) The brigade S2 develops products to make everyone in the brigade knowledgeable of intelligence collection requirements. [CALL Bulletin, No. 90-4, p.15].		
(2) The brigade S2 briefs the initial intelligence estimate to the brigade commander during the mission analysis briefing. [FM 34-8, p. 2-5, ARTEP 71-3 MTP, Tasks 71-3-2006/6; 71-3-2001].		
(3) The brigade S2 exchanges relevant, current threat situation and information with the brigade staff and supporting military intelligence units. [FM 34-130, p. 1-4; Bulletin, No. 90-9, p. III-3].		
(a) The direct support (DS) military intelligence (MI) company: [AN].		
(1) Acquires information from division and higher sources that is needed by the brigade. [FN-Intel School, SME].		
(2) Performs analysis of the brigade's critical tactical capabilities that the enemy might target, conducted by the counter intelligence (CI) section. [FN-NTC, Bde Intel O/C].		
(b) The assistant brigade engineer (ABE) uses the S2's threat models to develop threat options for the employment of obstacles or breaching equipment. [FM 34-130, p. 1-4, AN].		
(c) The brigade air defense artillery (ADA) officer uses the brigade S2's threat models as the basis for developing enemy air course of action (COA) models and supporting templates and matrices. [FM 34-130, p. 1-4, AN].		

TASK STEPS AND PERFORMANCE MEASURES	GO	NO GO
(d) The brigade S4 uses the S2's threat models to focus on the logistics support mission and prepare IPB products for his functional area. [FM 34-130, p. 1-4, AN].		
(e) The brigade chemical officer (CHEMO) uses the S2's enemy threat models to identify the enemy options for employing nuclear, biological, chemical (NBC) weapons. [FM 34-130, p. 1-4, AN].		
(f) The brigade signal officer (SO) provides input and coordination to the brigade S2 regarding: [ARTEP 71-3 MTP, Task 71-3-1102/lb].		
(1) Evaluation of meaconing, intrusion, jamming, and interference (MIJI) reports and security violations.		
(2) Planning, coordination, and staff supervision of communications security (COMSEC) signal security (SIGSEC).		
(3) Use of signal activities in deception operations.		
(g) The brigade fire support officer (FSO) and targeting officer use the S2's threat models to identify the enemy options for employing indirect fire weapons. [AN - See CCF 15].		
(h) The brigade S3 air uses the S2's threat models with the ADA officer as the basis for developing enemy air COA models. [AN].		
(i) The brigade S3 coordinates with the brigade S2 to develop estimates of initial force ratios between the brigade, its elements, and the enemy. [AN].		
d. The brigade S2 assists in preparation of the initial warning order. [ARTEP 71-3 MTP, Tasks 71-3-2006; 71-3-2001].		
e. The division G2 analysis and control element (ACE) pushes focused information required by the maneuver brigades to the appropriate brigade. [FN-BCBST, Intel O/T].		
f. The brigade S2 provides subordinate units with relevant, current threat situation and information. [FN-NTC, Bde Intel O/C].		
g. The brigade S2 section conducts IPB to plan the force security battle and reconnaissance/counter-reconnaissance operations. [ARTEP 71-3-MTP, Task 71-3-2010/2].		
• GATE TASKS / TASK 1 INDIVIDUAL/COLLECTIVE PROFICIENCIES		

TASK STEPS AND PERFORMANCE MEASURES	GO	NO GO
(1) Brigade S2 (STP 34-35II-MQS) -Participate in the development of intelligence requirements (01-3381.01-5001). -Direct the intelligence portion of the IPB process (01-3381.01-5002). -Prepare the intelligence estimate (01-3381.41-4004). (2) Brigade S2 SECTION (ARTEP 34-245-10-DRILL) -Perform IPB (Drill 2). (3) Brigade Senior (SR) INTELLIGENCE (INTEL) NCO (STP 34-96B14-SM-TG) -Review current intelligence holdings to identify gaps (301-336-2004). -Supervise preparation of intelligence estimate (301-336-3104). (4) Assistant Brigade Engineer (ABE) (STP 5-21II-MQS) -Establish intelligence production requirements and essential elements of terrain or engineer information (01-2250.20-1004). -Provide input to intelligence preparation of the battlefield (01-2250.20-1006). (5) Officer Common Tasks for: Bde CDR, DS MI CO CDR, S2, S2 Section, S3, S3 Section, FSO, CHEMO, Asst Bde ENGR (ABE), ADA LNO, Army AVN LNO, ALO, S1, S4, BSO, Air/Naval Gunfire Liaison Officer, MP Plt Leader (STP 21-II-MQS, Common Tasks) -Communicate effectively as a commander or staff officer (03-9001.12-0003). -Solve problems using the military problem-solving process (03-9001.13-0001). -Brief to inform, persuade, or direct (01-9007.01-0250).(STP 17-12II-MQS, Armor) -Perform duties as TOC shift officer (01-1250.00-0006). -Perform a map reconnaissance (01-1250.00-0002). -Conduct a reconnaissance patrol (03-3164.00-0005). -Plan the IPB (01-3353.02-0090). (6) NCO Common Tasks for: All Primary and Special Staff NCOs (STP 21-24-SMCT, Common tasks) -Prepare situation report (SITREP) (071-332-5022). -Conduct operations security (OPSEC) procedures (113-573-0002). (7) (ARTEP 71-3-MTP) -Perform duties in a tactical operations center or admin/log command post (7-1-3904/3036). -Analyze tactical mission statement (71-3-3001). -Prepare operational journals (71-3-2006(2)). -Advise and assist staff on elements of BOS that support/impact their staff function (71-3-0001). -Perform duties/functions as S-3 (Operations NCO) (7-1-3902). -Maintain the current situation (71-3-3003). • TASK LINKAGES TO OTHER CCFs/UNITS /TASK 1		

TASK STEPS AND PERFORMANCE MEASURES	GO	NO GO
(1) Division CCF 20. -The division establishes and maintains communications systems that allow communications and database access with higher, lower, adjacent, and supporting units and staffs.		
(2) Division CCF 2. -The division G2 disseminates time-sensitive intelligence immediately and requests intelligence information.		
(3) Division CCF 4. -The division G2 disseminates IPB information and products as they are developed and updated.		
(4) Brigade CCF 18, Task 1. -The brigade establishes and maintains communications systems that allow communications and database access with higher, lower, adjacent, and supporting units and staffs.		
(5) Brigade CCF 19, Task 5. -The brigade establishes and maintains communications systems that allow communications and database access with higher, lower, adjacent, and supporting units and staffs.		
(6) Brigade CCF 20, Task 5. -The brigade establishes and maintains communications systems that allow communications and database access with higher, lower, adjacent, and supporting units and staffs.		
(7) Direct Support (DS) Military Intelligence (MI) Company CCF 4. -The DS MI company commander reports intelligence information.		
(8) Task Force (TF) CCF 2, Task 4. -The TF S2s report intelligence.		
(9) TF CCF 4, Task 4. -The TF S2s disseminate intelligence.		
(10) Engineer Battalion CCF 4. -The S2 disseminates intelligence.		
(11) Direct Support (DS) Field Artillery (FA) Battalion CCF 4. -The S2 disseminates intelligence.		
(12) Forward Support Battalion (FSB) CCF 4. -The S2 disseminates intelligence.		
(13) Air Defense Artillery (ADA) Battery CCF 4. -The ADA battery commander reports intelligence information.		
(14) Military Police (MP) Platoon CCF 4. -The MP platoon leader reports intelligence information.		

TASK STEPS AND PERFORMANCE MEASURES	GO	NO GO
(15) MI Battalion CCF 4. -The S2 disseminates IPB information and products as they are developed and updated.		

- LESSONS LEARNED INTEGRATED INTO TASK LIST / TASK 1

(1) LL - That commanders set up indication and warning centers within their G2/S2 sections at battalion and higher headquarters for different threat scenarios ranging from all-out ground attack to chemical attack to air raids. [CALL Newsletter, "Winning in the Desert: Tactics, Techniques and Procedures for Maneuver Commanders," No. 90-8, Special Edition, Intelligence, p. 1-4].

(2) LL - The commander and XO should ensure that:

- Each battle staff section becomes the subject matter expert on OPFOR doctrine, capabilities, organization, and tactics for its specific BOS.

- The staff is trained on the threat at home station paying particular attention to enemy tendencies that coincide with the first stages of the IPB process.

- The tracking of enemy events related to the commander's intent during the battle is coordinated. [CALL Combat Training Centers (CTCs) Bulletin, "Lessons and Information," No. 93-4, Tactics, Techniques and Procedures (TTP), Intelligence p. 27].

(3) LL - CA teams, the Chaplain, the S4, and S5, MPs, and others should contribute to the IPB process and expand its focus. [CALL Bulletin, "Operation Just Cause Lessons Learned: Volume III. Intelligence, Logistics & Equipment," No. 90-9, Low Intensity Conflict (LIC)-specific Intelligence Preparation of the Battlefield (IPB), p. III-3].

(4) LL - Evaluate intelligence requirements early on. Make everyone in the task force knowledgeable of intelligence collection requirements. [CALL Bulletin, "Introduction to Low Intensity Conflict," No. 90-4, p. 15].

TASK STEPS AND PERFORMANCE MEASURES	GO	NO GO
(5) LL - The IPB drives tactical planning. The S2 is a key player, but IPB is not strictly an S2 function. The IPB process requires the involvement of the commander and his entire staff. Production of event and decision support templates requires participation by the S3, FSO, ADAO, and engineer at a minimum. The commander's intent is the cornerstone of the rest of the IPB staff process. The S2 finalizes his collection plan against the commander's intent. This enables him to tell the commander: -What the enemy force opposing them is. -Where it's located. -What kind of terrain they can expect. -Other mission critical information [CALL Compendium, "Volume I: Heavy Forces," Intelligence And Electronic Warfare, p. 3-4].		

2. **The brigade S2 defines the battlefield environment.** [FM 34-130, p. 2-2].

- KEY PARTICIPANTS BY TASK / TASK 2

    Brigade commander, S2, S2 section, SR INTEL NCO, DS MI CO CDR, S3, S3 section, FSO, CHEMO, NBC NCO, assistant brigade ENGR (ABE), ADA LNO, Army AVN LNO, ALO, S1, S4, BSO, air/naval gunfire liaison officer, MP platoon leader

    a. The brigade S2 identifies significant characteristics of the environment consisting of: [FM 34-130, p. 2-3]

    (1) Geography, terrain, and weather of the area.

    (2) Population demographics (ethnic and religious groups, age distribution, income groups).

    (3) Political or socioecomonic factors.

    (4) Infrastructures, such as transportation or telecommunications.

    (5) Rules of engagement (ROE) or legal restrictions such as international treaties or agreements.

    (6) Threat forces and their capabilities, in general terms.

    b. The brigade S2 identifies the limits of the area of operations (AO). [FM 34-130,p. 2-4; ARTEP 71-3 MTP, Task 71-32001/5c(2)].

    (1) Ground AO.

    (2) Air AO.

TASK STEPS AND PERFORMANCE MEASURES	GO	NO GO
(3) Water AO.		

c. The brigade S2 establishes the limits of the area of interest (AI). [FM 34-130, p. 2-4].

    (1) Ground AI.

    (2) Air AI.

    (3) Water AI.

    (4) The brigade S2 evaluates the area of interest considering: [ARTEP 71-3 MTP, Task 71-3-2001/2a].

        (a) Width.

        (b) Depth.

        (c) Airspace.

        (d) Time.

d. The brigade S2 directs the collection of the materials and intelligence required to conducts the remainder of the IPB. [FM 34-130, p. 2-7].

e. The brigade S2 continues to develop and update the PIR and IR. [FM 34-130, p. 2-7; AN].

f. The brigade S2 refines division IPB products as appropriate. [FM 34-130, p.2-7; AN].

•   GATE TASKS / TASK 2
    INDIVIDUAL/COLLECTIVE PROFICIENCIES

    (1) Brigade S2 (STP 34-35II-MQS)
        -Participate in the development of intelligence requirements (01-3381.01-5001).
        -Direct the intelligence portion of the IPB process (01-3381.01-5002).
        -Prepare the intelligence estimate (01-3381.41-4004).
        -Conduct battlefield area evaluation (01-3381.01-4012).
        -Conduct terrain and weather analysis (01-3381.01-4013).

    (2) Brigade S2 Section (ARTEP 34-245-10-DRILL)
        -Perform IPB (Drill 2).

    (3) Brigade SR Intel NCO (STP 34-96B14-SM-TG)
        -Supervise preparation of intelligence estimate (301-336-3104).
        -Recommend area of interest and operation based on METT-T (301-336-4000).

TASK STEPS AND PERFORMANCE MEASURES	GO	NO GO
(4) ABE (STP 5-21II-MQS) -Advise the commander on the use of terrain for combat operations (O1-2250.20-1008).		
(5) Officer Common Tasks for: Bde Cdr, DS MI CO CDR, S2, S2 Section, S3, S3 Section, FSO, CHEMO, Asst Bde ENGR (ABE), ADA LNO, Army AVN LNO, ALO, S1, S4, BSO, Air/Naval Gunfire Liaison Officer, MP Plt Leader (STP 21-II-MQS, Common Tasks) -Communicate effectively as a commander or staff officer (03-9001.12-0003). -Solve problems using the military problem-solving process (03-9001.13-0001). -Brief to inform, persuade, or direct (01-9007.01-0250).(STP 17-12II-MQS, Armor) -Perform duties as TOC shift officer (01-1250.00-0006). -Perform a map reconnaissance (01-1250.00-0002). -Conduct a reconnaissance patrol (03-3164.00-0005). -Plan the IPB (01-3353.02-0090).		
(6) NCO Common Tasks for: All Primary and Special Staff NCOs (STP 21-24-SMCT, Common tasks) -Prepare situation report (SITREP) (071-332-5022). -Conduct operations security (OPSEC) procedures (113-573-0002).NCO Common-Tasks for: All Primary and Special Staff NCOs (STP 21-24-SMCT, Common tasks) -Prepare situation report (SITREP) (071-332-5022). -Conduct operations security (OPSEC) procedures (113-573-0002).		
(7) (ARTEP 71-3-MTP) -Perform duties in a tactical operations center or admin/log command post (7-1-3904/3036). -Analyze tactical mission statement (71-3-3001). -Prepare operational journals (71-3-2006(2)). -Advise and assist staff on elements of BOS that support/impact their staff function (71-3-0001). -Perform duties/functions as S-3 (Operations NCO) (7-1-3902). -Maintain the current situation (71-3-3003).		
• TASK LINKAGES TO OTHER CCFs/UNITS /TASK 2		
(1) Division CCF 4. -The division G2 disseminates IPB products as they are produced and updated.		
(2) Brigade CCF 18, Task 1. -The brigade establishes and maintains communications systems that allow communications and database access with higher, lower, adjacent, and supporting units and staffs.		

TASK STEPS AND PERFORMANCE MEASURES	GO	NO GO

(3) Brigade CCF 19, Task 5.
-The brigade establishes and maintains communications systems that allow communications and database access with higher, lower, adjacent, and supporting units and staffs.

(4) Brigade CCF 20, Task 5.
-The brigade establishes and maintains communications systems that allow communications and database access with higher, lower, adjacent, and supporting units and staffs.

(5) DS MI Company CCF 4.
-The DS MI company commander provides added intelligence database access and information.

(6) MI Battalion CCF 4.
-The S2 disseminates IPB information and products as they are developed and updated.

(7) Engineer Battalion CCF 4.
-The engineer battalion provides TerraBase products.

- LESSONS LEARNED INTEGRATED INTO TASK LIST / TASK 2

(1) LL - Desert environments give special significance to the terrain aspect of METT-T. Commanders at all levels should place special emphasis on the impact of desert terrain as it relates to the other factors of METT-T. [CALL Newsletter, "Winning in the Desert: Tactics, Techniques, and Procedures for Maneuver Commanders," No. 90-8, Special Edition, Intelligence, p. 1-4].

(2) LL - The IPB process is sound. LIC operations require the consideration of more factors than the traditional enemy, terrain, and weather. The civilian population, logistics sustainability, and critical economic and resource areas are important nontraditional factors. [CALL Bulletin, "Operation Just Cause Lessons Learned: Volume III. Intelligence, Logistics & Equipment," No. 90-9, Low Intensity Conflict (LIC)-specific Intelligence Preparation of the Battlefield (IPB) p. III-3].

3. The brigade S2 describes the battlefield effects. [FM 34-130, p. 2-7].

- KEY PARTICIPANTS BY TASK / TASK 3

S2, S2 section, SR INTEL NCO, DS MI Co CDR, S3, S3 section, FSO, CHEMO, NBC NCO, assistant brigade ENGR (ABE), ADA LNO, Army AVN LNO, ALO, S1, S4, BSO, air/naval gunfire liaison officer, MP platoon leader

a. The brigade S2 conducts terrain analysis. [FM 34-130, p. 2-8 except where noted].

(1) The brigade S2 conducts a ground reconnaissance, if at all possible.

TASK STEPS AND PERFORMANCE MEASURES	GO	NO GO
(2) The brigade S2 obtains any products available from the engineer terrain detachment.		
(3) The brigade S2 specifically includes the following in the analysis of military aspects of terrain: [ARTEP 71-3 MTP, Task 71-32001/2b].		
(a) Terrain profile (line of sight), from TerraBase products provided by the ABE. [ARTEP 71-3 MTP, Task 71-3-2001/2b(2)].		
(b) Vegetation. [ARTEP 71-3 MTP, Task 71-3-2001/2b(3)].		
(c) Lines of communication and transportation. [ARTEP 71-3 MTP, Task 71-3-2001/2b(4)].		
(d) Trafficability. [ARTEP 71-3 MTP, Task 71-3-2001/2b(5)].		
(4) The brigade S2 coordinates with the rest of the brigade staff in evaluating effects of terrain on air and ground operations. [FN-NTC, Bde Intel O/C].		
(a) The ABE assists the brigade S2 in evaluating the effects of terrain on ground operations: [ARTEP 71-3 MTP, Task 71-3-8001/2].		
(1) The ABE coordinates with the brigade S2 to identify avenues of approach.		
(a) The ABE determines the tactical merits of each avenue of approach.		
(b) The ABE determines the potential problems for confirmed avenues of approach.		
(2) The ABE reviews information available on the enemy's likely courses of action and engineer capabilities.		
(3) The ABE performs the mobility analysis from both the brigade and enemy points of view considering:		
(a) Observation and fields of fire.		
(b) Cover and concealment.		
(c) Obstacles.		
(d) Key terrain.		
(e) Adequacy of maneuver space.		
(f) Ease of movement.		

TASK STEPS AND PERFORMANCE MEASURES	GO	NO GO
(b) The brigade ADA officer evaluates the effects of terrain on enemy air COA models and supporting templates and matrices. [FM34-130, p. 1-4].		
(c) The brigade S4 evaluates the effects of terrain on the logistics support mission and prepares IPB products for his functional area. [FM34-130, p. 1-4].		
(d) The brigade CHEMO evaluates the effects of terrain on the options for employing NBC weapons. [FM 34-130, p. 1-4].		
(e) The SO evaluates the effects of terrain on brigade and enemy: [ARTEP 71-3 MTP, Task 71-3-1102/1b].		
(1) Meaconing, intrusion, jamming, and interference (MIJI).		
(2) Planning, coordination, and staff supervision of COMSEC and SIGSEC.		
(3) Use of signal activities of deception operations.		
(f) The brigade FSO/targeting officer evaluates the effects of terrain on brigade and enemy air COA models. [AN].		
(g) The S3 air with the ADA officer evaluates the effects of terrain on brigade and enemy air COA models. [AN - See CCF 15].		
(5) The brigade S2 describes results of evaluation by identifying areas of the battlefield that favor, disfavor, or do not affect each COA and relates the analysis to the terrain's effects on the broad COAs available to threat and brigade forces by identifying the areas best suited for use as potential: [FM 34-130, p.2-8].		
(a) Engagement areas and ambush sites.		
(b) Battle positions.		
(c) Immediate or intermediate objectives.		
(d) Obstacle sites [AN].		
(e) Reserve positions. [AN].		
(f) Artillery firing positions. [AN].		
(g) Attack helicopter firing positions. [AN].		
(h) Brigade commander specified areas of interest [AN].		
(6) The brigade S2, as time permits or as the situation requires, also identifies potential: [FM 34-130, p. 2-8].		

TASK STEPS AND PERFORMANCE MEASURES	GO	NO GO
(a) Assembly and dispersal areas.		
(b) Observation posts.		
(c) Air defense systems positions.		
(d) Intelligence and target acquisition system positions.		
(e) FARPs.		
(f) LZs or Dzs.		
(g) Infiltration lanes.		
b. The brigade S2 conducts weather analysis. [FM 34-130, p. 2-23; ARTEP 71-3 MTP, Task 71-3-2001/2c].		
(1) The brigade S2 considers the impact of weather on terrain and trafficability. [ARTEP 71-3 MTP, Task 71-3-2001/2c].		
(2) The brigade S2 analyzes the military aspects of weather. [FM 34-130, p. 2-23].		
(a) The brigade S2 determines visibility (including fog and cloud cover) and light data and analyzes the effect on operations.		
(b) The brigade S2 determines wind speed and direction and analyzes effects on operations.		
(c) The brigade S2 evaluates precipitation data and determines effect on operations.		
(d) The brigade evaluates cloud cover data and determines effect on operations.		
(e) The brigade S2 evaluates temperature and humidity and determines effect on operations.		
(3) The brigade S2 coordinates with the rest of the brigade staff in evaluating weather effects on air and ground operations. [FN-NTC, Bde Intel O/C].		

TASK STEPS AND PERFORMANCE MEASURES	GO	NO GO
(a) The ABE evaluates the effects of weather on ground operations. [ARTEP 71-3 MTP, Task 71-3-8001/2].		
(1) The ABE reviews information available on the enemy's likely courses of action and engineer capabilities.		
(2) The ABE determines the potential problems for confirmed avenues of approach.		
(3) The ABE performs the mobility analysis from both the brigade and enemy points of view, considering:		
(a) Observation and fields of fire.		
(b) Cover and concealment.		
(c) Obstacles.		
(d) Key terrain.		
(e) Adequacy of maneuver space.		
(f) Ease of movement.		
(b) The brigade ADA officer evaluates the effects of weather on enemy air COA models and supporting templates and matrices. [FM 34-130, p. 1-4].		
(c) The brigade S4 evaluates the effects of weather on the logistics support mission and prepares IPB products for his functional area. [FM 34-130, p. 1-4].		
(d) The brigade chemical officer evaluates the effects of weather on the options for employing NBC weapons. [FM 34-130, p. 1-4].		
(e) The SO evaluates the effects of weather on brigade and enemy: [ARTEP 71-3 MTP, Task 71-3-1102/lb].		
(1) Meaconing, intrusion, jamming, and interference (MIJI).		
(2) Planning, coordinating, and staff supervision of COMSEC and SIGSEC.		
(3) Use of signal activities of deception operations.		
(f) The brigade FSO/targeting officer evaluates the effects of weather on the brigade and enemy options for employing indirect fire weapons. [AN-Bde TA of CCF 15].		
(g) The S3 air evaluates, with the brigade ADA officer, the effects of weather on brigade and enemy air COA models. [AN].		

TASK STEPS AND PERFORMANCE MEASURES	GO	NO GO
(4) The brigade S2 evaluates the weather's effects on military operations. [FM 34-130, p. 2-24].		
(a) The brigade S2 considers both direct and indirect effects.		
(b) The brigade S2 revises the effects of weather upon terrain analysis as the weather changes.		
(c) The brigade S2 evaluates the direct effects of weather on:		
(1) Personnel.		
(2) Specific types of equipment and systems.		
(3) Types of military operations to include positioning of fires.		
c. The brigade S2 conducts analysis of other characteristics of the battlefield and includes all aspects of the battlefield environment that affect brigade or threat COAs not already incorporated into the terrain and weather analysis to include: [FM34-130, p. 2-26].		
(1) Effects of logistics infrastructure.		
(2) Effects of population demographics.		
(3) Other considerations, as appropriate.		
d. The brigade S2 describes the battlefield effects on threat and brigade capabilities and broad COAs. [FM 34-130, p. 2-28].		
(1) The brigade S2 depicts the results of terrain analysis in one of the following formats: [FM 34-130, p. 2-29].		
(a) Analysis of the AO.		
(b) Intelligence estimate.		
(c) Graphic products that will aid the staff in the completion of their own estimates and plans.		
(2) The brigade S2 constructs and maintains a modified combined obstacle overlay (MCOO) which starts with the combined obstacle overlay, provided by the ABE, and adds: [ARTEP 71-3-2001/2b(6)].		
(a) Cross-country mobility classifications.		
(b) Avenues of approach and mobility corridors.		
(c) Counter-mobility corridors.		
(d) Defensible terrain.		

TASK STEPS AND PERFORMANCE MEASURES	GO	NO GO
(e) Engagement areas.		

    (f) Key terrain.

   (3) The brigade S2 distributes the graphic products developed during analysis and evaluation, as needed, to support the remainder of the staff and other commands in their own. IPB and planning efforts. [FM 34-130, p.2-29].

- GATE TASKS / TASK 3
  INDIVIDUAL/COLLECTIVE PROFICIENCIES

   (1) Brigade S2 (STP 34-35II-MQS)
     -Participate in the development of intelligence requirements (01-3381.01-5001).
     -Direct the intelligence portion of the IPB process (01-3381.01-5002).
     -Prepare the intelligence estimate (01-3381.41-4004).
     -Conduct battlefield area evaluation (01-3381.01-4012).
     -Conduct terrain and weather analysis (01-3381.01-4013).

   (2) Brigade S2 SECTION (ARTEP 34-245-10-DRILL)
     -Perform IPB (Drill 2).

   (3) Brigade SR INTEL NCO (STP 34-96B14-SM-TG)
     -Supervise preparation of intelligence estimate (301-336-3104).

   (4) ABE (STP 5-21II-MQS)
     -Advise the commander on the use of terrain for combat operations (01-2250.20-1008).

   (5) Officer Common Tasks for: DS MI CO CDR, S2, S2 Section, S3, S3 Section, FSO, CHEMO, Asst Bde ENGR (ABE), ADA LNO, Army AVN LNO, ALO, S1, S4, BSO, Air/Naval Gunfire Liaison Officer, MP Plt Leader (STP 21-II-MQS, Common Tasks)
     -Communicate effectively as a commander or staff officer (03-9001.12-0003).
     -Solve problems using the military problem-solving process (03-9001.13-0001).
     -Brief to inform, persuade, or direct (01-9007.01-0250).(STP 17-12II-MQS, Armor)
     -Perform duties as TOC shift officer (01-1250.00-0006).
     -Perform a map reconnaissance (01-1250.00-0002).
     -Conduct a reconnaissance patrol (03-3164.00-0005).
     -Plan the IPB (01-3353.02-0090).(STP 17-12II-MQS, Armor)
     -Perform duties as TOC shift officer (01-1250.00-0006).
     -Perform a map reconnaissance (01-1250.00-0002).
     -Conduct a reconnaissance patrol (03-3164.00-0005).
     -Plan the IPB (01-3353.02-0090).

TASK STEPS AND PERFORMANCE MEASURES	GO	NO GO
(6) NCO Common Tasks for: All Primary and Special Staff NCOs (STP 21-24-SMCT, Common tasks) -Prepare situation report (SITREP) (071-332-5022). -Conduct operations security (OPSEC) procedures (113-573-0002).		
(7) (ARTEP 71-3-MTP) -Perform duties in a tactical operations center or admin/log command post (7-1-3904/3036). -Analyze tactical mission statement (71-3-3001). -Prepare operational journals (71-3-2006(2)). -Advise and assist staff on elements of BOS that support/impact their staff function (71-3-0001). -Perform duties/functions as S-3 (Operations NCO) (7-1-3902). -Maintain the current situation (71-3-3003).		
• TASK LINKAGES TO OTHER CCFs/UNITS / TASK 3		
(1) Division CCF 4. -The division G2 disseminates IPB products as they are produced and updated.		
(2) Brigade CCF 18, Task 1. -The brigade establishes and maintains communications systems that allow communications and database access with higher, lower, adjacent, and supporting units and staffs.		
(3) Brigade CCF 19, Task 5. -The brigade establishes and maintains communications systems that allow communications and database access with higher, lower, adjacent, and supporting units and staffs.		
(4) Brigade CCF 20, Task 5. -The brigade establishes and maintains communications systems that allow communications and database access with higher, lower, adjacent, and supporting units and staffs.		
(5) Brigade CCF 18, Task 6. -The brigade commander and staff prepare estimates.		
(6) DS MI Company CCF 2. -The company commander directs collection of intelligence to fill intelligence gaps.		
(7) MI Battalion CCF 4. -The S2 disseminates IPB information and products as they are developed and updated.		
(8) Engineer Battalion CCF 4. -The engineer battalion provides TerraBase products.		

TASK STEPS AND PERFORMANCE MEASURES	GO	NO GO
• LESSONS LEARNED INTEGRATED INTO TASK LIST / TASK 3 N/A		
4. The brigade S2 evaluates the threat. [FM 34-130, p. 2-29].		
• KEY PARTICIPANTS BY TASK / TASK 4		
Brigade commander, S2, S2 section, SR INTEL NCO, DS MI CO CDR, S3, S3 section, CHEMO, NBC NCO, FSO, brigade targeting officer, assistant brigade ENGR (ABE), ADA LNO, Army AVN LNO, ALO, S1, S4, FSB OPENSOFF, BSO, air/naval gunfire liaison officer, MP platoon leader		
a. The brigade S2 conducts a threat evaluation with the assistance of the brigade staff, to include: [AN; FN-NTC, Bde Intel O/C].		
(1) ABE.		
(2) ADA LNO.		
(3) Brigade S3.		
(4) Brigade S1.		
(5) Brigade S4.		
(6) DS MI company commander.		
(7) Brigade S3 Air.		
(8) Army aviation (AVN) liaison office (LNO).		
(9) Air liaison officer (ALO).		
(10) CHEMO.		
(11) FSO/targeting officer.		
(12) Brigade SO.		
b. The brigade S2 develops doctrinal templates portraying how the threat would potentially fight on the defined battlefield. [ARTEP 71-3 MTP, Task 71-3-2001/2d(2)].		
c. The brigade S2 and the brigade targeting officer identifies type high value targets (HVTs). [FM 34-130, p. 2-33].		
d. The brigade S2 identifies threat capabilities that can influence accomplishment of the brigade mission. [FM 43-130, p. 2-36].		

TASK STEPS AND PERFORMANCE MEASURES	GO	NO GO
(1) The brigade S2 identifies those broad threat COAs that the threat could choose such as: [FM 34-130, p.2-36].		
(a) Attack.		
(b) Defend.		
(c) Reinforce.		
(d) Conduct a retrograde.		
(2) The brigade S2 identifies other capabilities that support broad threat COAs or specific types of operations, such as: [FM 34-130, p. 2-37].		
(a) Use of NBC weapons.		
(b) Use of supporting air assets (CAS).		
(c) Use of attack helicopters. [AN].		
(d) Intelligence collection.		
(e) Use of EW.		
(f) Engineer operations.		
(g) Air assault or airborne operations.		
(h) Amphibious operations.		
(i) Riverine operations.		
(j) Psychological operations (PSYOP).		
(k) Deception operations.		
e. The brigade S2 uses all available intelligence sources in evaluation threat capabilities and focuses on each item to address the impact on the threat capability. [FM 34-130, p.2-37].		
(1) The brigade S2 uses order of battle (OB) files for the particular threat force being evaluated.		
(2) The brigade S2 addresses additional threat strengths or weaknesses caused by the current situation.		
(3) The brigade S2 addresses the threat's ability to operate in limited visibility.		
(4) The brigade S2 addresses the threat training level.		

TASK STEPS AND PERFORMANCE MEASURES	GO	NO GO
(5) The brigade S2 addresses the effects of time on threat capabilities.		
(6) The brigade S2 states explicitly when time or some other factor is a critical element that impacts on the treat capability.		
• GATE TASKS / TASK 4 INDIVIDUAL/COLLECTIVE PROFICIENCIES		
(1) Brigade S2 (STP 34-35II-MQS) -Participate in the development of intelligence requirements (01-3381.01-5001). -Direct the intelligence portion of the IPB process (01-3381.01-5002). -Prepare the intelligence estimate (01-3381.41-4004). -Prepare OB studies (01-3381.41-4015). -Conduct threat evaluation (01-3381.01-4014).		
(2) Brigade S2 SECTION (ARTEP 34-245-10-DRILL) -Perform IPB (Drill 2).		
(3) Brigade SR INTEL NCO (STP 34-96B14-SM-TG) -Supervise preparation of intelligence estimate (301-336-3104). -Supervise organization and maintenance of order of battle information (301-336-2001).		
(4) Fire Support Officer (FSO) (STP 6-13II-MQS, Artillery) -Interpret threat organization and equipment (01-2660.00-2004).		
(5) Fire Support Element (FSE) NCO (STP 6-13F14-SM-TG) -Analyze the formations of threat forces (061-284-4000).		
(6) Officer Common Tasks for: Bde CDR, S2, S2 Section, DS MI CO CDR, S3, S3 Section, CHEMO, FSO, Asst Bde ENGR (ABE), ADA LNO, Army AVN LNO, ALO, S1, S4, FSB OPNs OFF, BSO, Air/Naval Gunfire Liaison Officer, MP Plt Leader(STP 21-II-MQS, Common Tasks) -Communicate effectively as a commander or staff officer (03-9001.12-0003). -Solve problems using the military problem-solving process (03-9001.13-0001). -Brief to inform, persuade, or direct (01-9007.01-0250). (STP 17-12II-MQS, Armor) -Plan the IPB (01-3353.02-0090). (STP 6-13II-MQS, Artillery) -Interpret threat organization and equipment (01-2660.00-2004).		
(7) NCO Common Tasks for: All Primary and Special Staff NCOs (ARTEP 71-3-MTP) -Advise and assist staff on elements of BOS that support/impact their staff function (71-3-0001).		

TASK STEPS AND PERFORMANCE MEASURES	GO	NO GO
(8) (STP 6-13F14-SM-TG) -Analyze the formations of threat forces (061-284-4000).		
• TASK LINKAGES TO OTHER CCFs/UNITS / TASK 4		
(1) Division CCF 4. -The division G2 disseminates IPB products as they are produced and updated.		
(2) Brigade CCF 18, Task 1. -The brigade establishes and maintains communications systems that allow communications and database access with higher, lower, adjacent, and supporting units and staffs.		
(3) Brigade CCF 19, Task 5 -The brigade establishes and maintains communications systems that allow communications and database access with higher, lower, adjacent, and supporting units and staffs.		
(4) Brigade CCF 20, Task 5. -The brigade establishes and maintains communications systems that allow communications and database access with higher, lower, adjacent, and supporting units and staffs.		
(5) Brigade CCF 18, Task 6. -The brigade commander and staff prepare estimates.		
(6) DS MI Company CCF 2. -The company commander directs collection and assessment of threat capabilities and friendly vulnerabilities.		
(7) Brigade CCF 15, Task 3. -The brigade S2 starts developing the high value target (HVT) list.		
• LESSONS LEARNED INTEGRATED INTO TASK LIST / TASK 4 N/A		
5. The brigade S2 determines threat courses of action. [FM34-130, p. 2-39].		
• KEY PARTICIPANTS BY TASK / TASK 5		
S2, S2 section, assistant S2, SR INTEL NCO, DS MI CO CDR, S3, S3 section, CHEMO, FSO, assistant brigade ENGR (ABE), ADA LNO, Army AVN LNO, ALO, S1, S4, BSO, air/naval gunfire liaison officer, MP platoon leader		
a. The brigade S2 focuses on the total environment's effects on COAs available to both brigade and threat forces. [FM 34-130, p. 2-28].		

TASK STEPS AND PERFORMANCE MEASURES	GO	NO GO
(1) The brigade S2 evaluates effects on Threat COAs considering the mission, intent, and capabilities of the threat that the brigade is facing.		
(2) The brigade S2 evaluates the battlefield completely from the perspective of the threat.		
b. The brigade S2 expresses the evaluation in terms of enemy COAs. [FM 34-130, p.2-29].		
c. The brigade S2 identifies the threat's likely objectives and desired end state. [FM 34-130, p. 2-40].		
d. The brigade S2 identifies the full set of rational courses of action available to threat forces. [FM 34-130, p. 2-41].		
(1) The brigade S2 considers at a minimum:		
(a) COAs the threat's doctrine describes as appropriate to the current situation and objectives identified.		
(b) Threat COAs which would significantly affect the brigade's mission.		
(c) Indirect and "wildcard" COAs.		
(d) Threat COAs indicated by recent activities and events.		
(2) The brigade S2's enemy COAs (ECOA) meet five criteria:		
(a) Suitability.		
(b) Feasibility.		
(c) Acceptability.		
(d) Uniqueness.		
(e) Consistency with threat doctrine.		
e. The brigade S2 develops each course of action in the amount of detail that time allows. [FM 34-130, Chap 2, p. 2-44].		
(1) The brigade S2 ensures that each COA addresses five questions: [FM 34-130, Chap 2, p. 2-44].		
(a) What type of operation?		
(b) When (time) the operation will begin?		
(c) Where to include sectors, zones, avenues of approach?		

TASK STEPS AND PERFORMANCE MEASURES	GO	NO GO

(d) How (method) the threat will employ assets; dispositions, location of main effort, and scheme of maneuver?

(e) Why? (The objective or end state the threat intends to achieve.)

(2) The brigade S2 develops threat COAs that include the following: [ARTEP 71-3 MTP, Task 71-3-2001/2d(3); FM 34-130, p.2-45].

(a) A situation template for each threat COA being considered.

(b) A description of the COA and options.

(c) A listing of HVTs.

f. The brigade S2 evaluates and prioritizes each course of action. [FM 34-130, p. 2-44].

(1) The brigade S2 analyzes each COA to identify strengths and weaknesses, center of gravity, and decision points.

(2) The brigade S2 evaluates each COA against the suitability, feasibility, acceptability, and doctrine consistency criteria.

(3) The brigade S2 evaluates each COA for how well it takes advantage of the battlefield environment.

(4) The brigade compares each COA against the others to determine if the threat is more likely to adopt one over the other.

(5) The brigade S2 considers that the threat may select a second or third COA while attempting a deception portraying acceptance of the best COA.

(6) The brigade S2 analyzes recent activity for indications that a COA is already being adopted.

(7) The brigade S2 uses judgment to rank order threat COAs.

g. The brigade S2 identifies initial collection requirements. [FM 34-130, p. 2-50].

(1) The brigade S2 identifies potential areas or activities (named areas of interest (NAI)) which, when threat operations occur and brigade forces observe them, will reveal the threat COA.

(2) The brigade S2 consolidates all NAIs on one event template.

(3) The brigade S2 develops an event matrix with all NAIs and indicators.

(4) The brigade refines the event matrix during the staff war gaming and targeting process.

TASK STEPS AND PERFORMANCE MEASURES	GO	NO GO
(5) The brigade integrates the brigade commander's battle damage assessment (BDA) related PIR into collection requirements. [FM34-1, 2-14].		

h. The brigade S2 develops the minimum essential IPB products with "good enough" detail that includes: [FM 34-130, p. 2-53].

    (1) A "set" of situational templates (one for each COA - most dangerous - most likely).

    (2) Event template and matrix.

- GATE TASKS / TASK 5
  INDIVIDUAL/COLLECTIVE PROFICIENCIES

    (1) Brigade S2 (STP 34-35II-MQS)
  -Participate in the development of intelligence requirements (01-3381.01-5001).
  -Direct the intelligence portion of the IPB process (01-3381.01-5002).
  -Prepare the intelligence estimate (01-3381.41-4004).
  -Participate in the threat integration process (01-3381.01-4015).
  -Conduct situation development (01-3381.01-4016).
  -Conduct target development (01-3381.01-4017).

    (2) Brigade S2 Section (ARTEP 34-245-10-DRILL)
  -Perform IPB (Drill 2).

    (3) Brigade SR Intel NCO (STP 34-96B14-SM-TG)
  -Supervise preparation of intelligence estimate (301-336-3104).
  -Coordinate targeting function (301-336-4100).

    (4) Officer Common Tasks for: S2, S2 Section, DS MI CO CDR, S3, S3 Section, CHEMO, FSO, Asst Bde ENGR (ABE), ADA LNO, Army AVN LNO, ALO, S1, S4, BSO, Air/Naval Gunfire Liaison Officer, MP Plt Leader(STP 21-II-MQS, Common Tasks)
  -Solve problems using the military problem-solving process (03-9001.13-0001).
  -Determine high payoff targets (HPT).
  -Determine best and worst case enemy course of action as it affects each staff BOS.

    (5) NCO Common Tasks for: All Primary and Special Staff NCOs (ARTEP 71-3-MTP)
  -Advise and assist staff on elements of BOS that support/impact their staff function (71-3-0001).
  -Maintain the current situation (71-3-3003).

      (STP 6-13F14-SM-TG)
  -Produce an HPT list (061-284-4245).

- TASK LINKAGES TO OTHER CCFs/UNITS / TASK 5

TASK STEPS AND PERFORMANCE MEASURES	GO	NO GO
(1) Brigade CCF 18, Task 1. -The brigade establishes and maintains communications systems that allow communications and database access with higher, lower, adjacent, and supporting units and staffs. (2) Brigade CCF 19, Task 5. -The brigade establishes and maintains communications systems that allow communications and database access with higher, lower, adjacent, and supporting units and staffs. (3) Brigade CCF 20, Task 5. -The brigade establishes and maintains communications systems that allow communications and database access with higher, lower, adjacent, and supporting units and staffs. (4) Brigade CCF 18, Task 7. -Staff develops course(s) of action. (5) DS MI Company CCF 4. -The company commander provides assessment of threat capabilities and friendly vulnerabilities. (6) Brigade CCF 15, Task 3. -The brigade S2 continues developing the high value target (HVT) list. • LESSONS LEARNED INTEGRATED INTO TASK LIST / TASK 5 N/A 6. **The brigade S2 participates in the staff course of action analysis.** [See brigade CCF 18, Task 8; ARTEP 71-3-MTP, Task 71-3-2001/3, Appendix A]. • KEY PARTICIPANTS BY TASK / TASK 6 Brigade commander, Bde XO, S2, selected S2 section individuals, DS MI CO CDR, S3, selected S3 section individuals, CHEMO, FSO, brigade targeting officer, assistant brigade ENGR (ABE), ADA LNO, Army AVN LNO, ALO, S1, S4, BSO, air/naval gunfire liaison officer, MP platoon leader a. The brigade S2 provides prepared situation/event templates for each threat COA and uses war gaming to record, modify, and refine them. [ARTEP 71-3-MTP, Task 71-3-2001/3a; FM 34-130, Appendix A]. (1) The brigade S2 provides prepared situation/event templates for each threat COA and uses war gaming to record, modify, and refine them. [ARTEP 71-3-MTP, Task 71-3-2001/3a; FM 34-130, Appendix A]. (2) The brigade S2 doctrinally and accurately represents how the threat would fight and react to brigade actions. [ARTEP 71-3-MTP, Task 71-3-2001/3b; FM 34-130, Appendix A].		

TASK STEPS AND PERFORMANCE MEASURES	GO	NO GO
(3) The brigade S2 and the targeting officer describe the location and activities of enemy HVTs. [FM 34-130, Appendix A].		
(4) The brigade S2 describes the threat actions that might prompt brigade actions, such as: [FM 34-130, Appendix A].		
(a) Committing the reserve.		
(b) Using attack helicopters or close air support.		
(c) Artillery missions against enemy target areas of interest (TAI).		
(d) Employing scatterable mine fields.		
(e) Shifting the main effort.		
(f) Advancing to the next phase of the operation.		
(g) Changing the overall mission.		
(h) Requesting additional assets from higher headquarters.		
(5) The brigade S2 assists in listing advantages and disadvantages of COA analysis. [FM34-130, Appendix A].		
(6) The brigade S2 assists in identifying decision points (DPs) and recording entries in appropriate staff recording tools (i.e., decision support template (DST), BOS synchronization matrix, and event templates). [ARTEP 71-3-MTP, Task 71-3-2001/3c&d; FM 34-130, Appendix A].		
(7) The brigade S2 coordinates with the DS MI company's CI team to conduct an analysis of the brigade's critical tactical capabilities to determine the brigade's vulnerabilities. [FN-Intel School].		
(a) The brigade S2 with the S3 coordinates with the CL team chief from the DS MI company to identify brigade force protection targets (e.g., key brigade targets within the brigade AO which are important to the success of the brigade mission). [FN-Intel School; NTC, Bde Intel O/C].		
(b) The CI team chief provides brigade force risk assessment and operations security (OPSEC) proposals to the brigade S2 and S3. [FN-Intel School; NTC, Bde Intel O/C].		
(8) The brigade S2 continues analysis of force ratios with the brigade S3. [AN].		
(9) The brigade S2 provides an analysis of the reaction of the civilian population, refugee control, and collateral damage. [CALL Bulletin, No. 90-9, p. III-3].		

TASK STEPS AND PERFORMANCE MEASURES	GO	NO GO
b. The S2, as a result of war gaming, modifies or finalizes recommendations to the brigade staff and commander about: [FM 34-130, Appendix A].		
(1) Brigade COA to recommend to the brigade commander.		
(2) NAIs that will locate and track HPTs, and includes them on the event template.		
(3) PIR to recommend to the brigade commander (PIR and IR with latest time intelligence of value (LTIOV)).		
(4) The projected enemy prisoner of war (EPW) capture rate to military police (MP) platoon leader. [ARTEP 71-3-MTP, Task 71-3-1202/1b].		
(5) Specific planning information required by other staff members. [AN].		
c. The brigade commander focuses the intelligence collection effort by providing: [FM 101-5, p. 4-17].		
(1) Perceived enemy COAs.		
(2) Restated mission.		
(3) Commander's intent.		
(4) Concept of operation.		
(5) Priorities.		
(6) The brigade timeline for planning.		
d. The brigade S2 and the brigade targeting officer plan and coordinate BDA requirements: [FM 34-1, p. 2-14].		
(1) The brigade commander decides which critical areas require BDA to determine operational success.		
(2) The brigade S2 integrates the commander's BDA-related PIR into the collection plan.		
(3) The brigade S2 synchronizes the commander's BDA collection with the target engagement windows.		
(4) The brigade S2 plans so that BDA-related PIR is integrated into the targeting process.		
(5) The brigade FSO/targeting officer request through the S2 the appropriate intelligence agency to determine damage assessment on selected targets. [ARTEP 71-3-MTP, Task 71-3-9003/3].		

TASK STEPS AND PERFORMANCE MEASURES	GO	NO GO
e. The brigade S2 section provides intelligence input to the brigade OPSEC plan. [ARTEP 71-3-MTP, Task 71-3-2011/2].		
(1) Coordinates with the division G2 to obtain enemy collection threat against brigade assets.		
(2) Obtains the current location of brigade maneuver elements from the S3.		
(3) Presents the S3 with an assessment of the vulnerability of brigade assets.		

- GATE TASKS / TASK 6
  INDIVIDUAL/COLLECTIVE PROFICIENCIES

  (1) Brigade S2 (STP 34-35II-MQS)
  -Participate in the development of intelligence requirements (01-3381.01-5001).
  -Prepare the intelligence estimate (01-3381.41-4004).
  -Prepare intelligence taskings (01-3381.39-4002).
  -Prepare reconnaissance and surveillance plan (01-3381.06-4011).
  -Select intelligence and electronic warfare operational sites (01-3381.04-4005).
  -Develop an intelligence and electronic warfare scheme of maneuver (01-3381.04-5001).
  -Plan employment of IEW assets (01-3381.04-5002).
  -Plan reconnaissance operations (01-3381.44-5001).
  -Participate in the development of the decision support template (01-3381.01-5003).
  -Recommend force protection countermeasures (01-3381.16-5003).
  -Conduct target development (01-3381.01-4017).

  (2) Brigade SR Intel NCO (STP 34-96B14-SM-TG)
  -Supervise preparation of intelligence estimate (301-336-3104).

  (3) FSO (STP 6-13II-MQS, Artillery)
  -Produce an HPT matrix (01-2840.00-2044).

  (4) FSE NCO (STP 6-13F14-SM-TG)
  -Produce an HPT list (061-284-4245).

  (5) Officer Common Tasks for: Bde Cdr, Bde XO, S2, selected S2 Section individuals, DS MI CO CDR, S3, selected S3 Section individuals, CHEMO, FSO, Asst Bde ENGR (ABE), ADA LNO, Army AVN LNO, ALO, S1, S4, BSO, Air/Naval Gunfire Liaison Officer, MP Plt Leader(STP 21-II-MQS, Common Tasks)
  -Communicate effectively as a commander or staff officer (03-9001.12-0003).
  -Solve problems using the military problem-solving process (03-9001.13-0001).
  -Brief to inform, persuade, or direct (01-9007.01-0250).

TASK STEPS AND PERFORMANCE MEASURES	GO	NO GO
(6) NCO Common Tasks for: All Primary and Special Staff NCOs (ARTEP 71-3-MTP) -Perform duties in a tactical operations center or admin/log command post (7-1-3904/3036). -Advise and assist staff on elements of BOS that support/impact their staff function (71-3-0001). -Maintain the current situation (71-3-3003).		

- TASK LINKAGES TO OTHER CCFs/UNITS / TASK 6

  (1) Brigade CCF 18, Task 1.
  -The brigade establishes and maintains communications systems that allow communications and database access with higher, lower, adjacent, and supporting units and staffs

  (2) Brigade CCF 19, Task 5.
  -The brigade establishes and maintains communications systems that allow communications and database access with higher, lower, adjacent, and supporting units and staffs.

  (3) Brigade CCF 20, Task 5.
  -The brigade establishes and maintains communications systems that allow communications and database access with higher, lower, adjacent, and supporting units and staffs.

  (4) Brigade CCF 18, Task 8.
  -Staff analyzes course(s) of action. (COAs)

  (5) Brigade CCF 18, Task 9.
  -Staff compares course(s) of actions (COAs).

  (6) Brigade CCF 4, Task 3.
  -The brigade S2 disseminates IPB information and products.

  (7) DS MI Company CCF 4.
  -The commander disseminates IPB information and products.

  (8) Brigade CCF 15, Task 6.
  -The targeting team develops the high payoff target (HPT) list.

- LESSONS LEARNED INTEGRATED INTO TASK LIST / TASK 6

  (1) LL - Courses of action must consider the reaction of the civilian population, refugee control, and collateral damage. [CALL Bulletin, "Operation Just Cause Lessons Learned: Volume III. Intelligence, Logistics and Equipment," No. 90-9, Low Intensity Conflict (LIC)-specific Intelligence Preparation of the Battlefield (IPB), p. III-3].

7. **The brigade S2 section prepares intelligence of products and assists in OPORD preparation.** [ARTEP 71-3-MTP, Task 71-3-2002/2].

TASK STEPS AND PERFORMANCE MEASURES	GO	NO GO

• KEY PARTICIPANTS BY TASK / TASK 7
  S2, S2 section, SR INTEL NCO, DS MI CO CDR
 	
  a. The brigade S2 section assists in preparing and dissemination of the warning order. [FM 101-5, p. 4-74].
 	
  b. The brigade S2 assists the brigade staff in finalizing the DST and synchronization matrix. [FM 34-130, Appendix A].
 	
  c. The brigade S2 updates the situation templates. [FM 34-130, Appendix A, p. A4].
 	
  d. The brigade S2 finalizes the collection plan. [FM 34-2, p. 3-10 to 3-16].
 	
    (1) The brigade S2 evaluates resources.
 	
    (2) The brigade S2 develops a collection strategy:
 	
      (a) The brigade S2 selects resources to task, requests support from and recommends taskings to the S3.
 	
      (b) The brigade S2 synchronizes collection to requirements via the intelligence synchronization matrix.
 	
    (3) The brigade S2 develops specific orders and requests (SOR) sets.
 	
    (4) The brigade S2 prioritizes SOR sets for collection assets.
 	
    (5) The brigade S2 includes collection plan taskings for the DS MI company. [FN-Intel School; NTC, Bde Intel O/C].
 	
    (6) The brigade S2 includes collection plan taskings for attached and/or OPCON collection assets. [FN-Intel School; NTC, Bde Intel O/C].
 	
    (7) The brigade S2 uses the brigade commander's intent to finalize the collection plan to enable him to tell the commander: [FM 34-3. p. 1-8; CALL Compendium, p. 3-4].
 	
      (a) Enemy type unit, types of equipment, and strength.
 	
      (b) Enemy locations/expected maneuver scheme.
 	
      (c) Terrain upon which the brigade can expect to fight.
 	
      (d) Other mission-critical information as required by the brigade commander.
 	
  e. The brigade S2 coordinates with the brigade S3 and selected staff to synchronize intelligence collection assets: [FN-Intel School].		

TASK STEPS AND PERFORMANCE MEASURES	GO	NO GO
(1) The S3 develops a five paragraph field order that includes the S2's recommendations for all collection assets and that addresses items such as: [FN-NTC, Bde Intel O/C].		
(a) Artillery support and means.		
(b) Logistics support and means.		
(c) Guidance and support on ways and means of insertion and extraction of reconnaissance elements.		
(d) Signal support and guidance on SOI and nets.		
(e) Reporting procedures.		
(2) The brigade S3/S3 air must coordinate UAV flight operations in the brigade and division airspace. [FN-Intel School].		
(3) The brigade S2 and brigade FSO/targeting officer and DS MI company commander coordinate on:		
(a) The use of UAV to target HPT/HVT. [FN-Intel School].		
(b) The allocation of offensive EW systems. [FM 6-20-30, p. D-18].		
(c) The systems and assets available for nonlethal attack. [FM 34-1. p. 2-21].		
(d) Measures to perform BDA. [FM 6-20-10, p. 2-26].		
(4) The brigade S2 and the DS MI company commander recommend to the S3: [FN-Intel School].		
(a) Unmanned aerial vehicle (UAV) missions to support surveillance of NAI and to satisfy brigade PIR.		
(b) Employment criteria and missions for the CI team(s):		
(1) Targets.		
(2) Transportation means.		
(3) Communications means.		
(4) Points of contact throughout brigade and BN/TF areas.		
(c) Missions and employment criteria for the interrogation team.		
(d) Systems and assets available for nonlethal attack. [FM 34-1. p. 2-21].		

TASK STEPS AND PERFORMANCE MEASURES	GO	NO GO

(5) The brigade ADA officer coordinates UAV flight information with air defense units. [FN-Intel School].

(6) The Army AVN LNO coordinates with the brigade S2 to:

(a) Extract information pertinent to army aviation planning such as: [ARTEP 71-3-MTP, Task 71-3-7001/1f].

(1) Target locations or objective.

(2) Summary or synopsis of the IPB.

(3) PIR.

(b) Coordinate UAV flight information with Army aviation units. [FN-Intel School.

f. The brigade S2 prepares the intelligence annex, detailing the following: [ARTEP 71-3-MTP, Task 71-3-2002/2; ARTEP 34-245-10-DRILL 3].

(1) Summary of enemy situation. [ARTEP 71-3-MTP, Task 71-3-2002/2a; ARTEP 34-245-10-DRILL 3].

(2) PIR and IR (focused on information the brigade commander needs to make key decisions and with latest time intelligence of value (LTIOV)). [ARTEP 71-3-MTP, Task 71-3-2002/2b; ARTEP 34-245-10-DRILL 3].

(3) Intelligence acquisition tasks. [ARTEP 71-3-MTP, Task 71-3-2002/2c; ARTEP 34-245-10-DRILL 3].

(4) Measures for handling personnel, documents, and material. [ARTEP 71-3-MTP, Task 71-3-2002/2d; ARTEP 34-245-10-DRILL 3].

(5) Documents and equipment required. [ARTEP 71-3-MTP, Task 71-3-2002/2e; ARTEP 34-245-10-DRILL 3].

(6) Counter-intelligence. [ARTEP 71-3-MTP, Task 71-3-2002/2f; ARTEP 34-245-10-DRILL 3].

(7) Reports and distribution. [ARTEP 34-245-10-DRILL 3].

(8) Other instructions, as required. [ARTEP 34-245-10-DRILL 3].

g. The brigade S2 provides intelligence input to the brigade S3 for paragraph 1.a, "Situation: Enemy Forces," of the brigade OPORD. [AN].

h. The brigade S2 coordinates for aerial intelligence support. [ARTEP 71-3-MTP, Task 71-3-2007].

i. The brigade S2 section finalizes the security plan. [ARTEP 71-3-MTP, Task 71-3-2011/1].

TASK STEPS AND PERFORMANCE MEASURES	GO	NO GO
(1) The brigade S2 section develops physical security requirements to support brigade elements to include:		
(a) Water points.		
(b) The brigade support area (BSA).		
(c) Communications.		
(d) Brigade CP access (e.g., personnel access rosters).		
(2) The brigade S2 section develops a security program for handling, storage, safeguarding, and destruction of classified material.		
(a) Includes emergency and day-to-day operations.		
(b) Ensures that program is manageable.		
(3) The brigade S2 section incorporates appropriate portions of the security plan in the brigade OPORD.		
(4) The brigade S2 section ensures that the plan includes applicable brigade tactical standing operating procedure (TSOP) requirements and procedures.		
j. The brigade S2 section produces and continually updates selected products: [AN].		
(1) Intelligence estimate. [FM 34-80, pp. A-0 to A-29].		
(2) Intelligence annex to the OPORD. [FM 34-80, A-0 to A-29].		
(3) Collection plan. [FM 34-80, pp. A-0 to A-29].		
(4) Battle damage assessment (BDA) requirements. [FM 34-1, p. 2-14].		
(5) Force protection intelligence. [FM 34-1, p. 2-13].		
(6) Terrain and weather overlays/matrices. [FM 34-8-2, Jan 95, p. B-1].		
(a) Modified combined obstacle overlay (MCOO).		
(b) Population status overlay.		
(c) Key facilities and target overlay.		
(d) Logistics sustainability overlay.		
(e) Lines of communication overlay.		
(f) Weather effects forecast matrix.		

TASK STEPS AND PERFORMANCE MEASURES	GO	NO GO
(g) Critical weather values matrix.		

(7) Templates and associated matrices.

    (a) Threat models.

    (b) Enemy COAs (ECOAs).

    (c) Event templates/matrix.

    (d) Intelligence information to support the S3's BOS synchronization matrix.

(8) Requests and reports. [FM 34-80, pp. A-0 to A29; AN].

    (a) Graphic intelligence summary (INTSUM) reports.

    (b) Intelligence report (INTREP) reports.

    (c) Tactical report (TACREP) reports.

    (d) Electronics intelligence requirement tasking message (ERTM).

    (e) Request for intelligence information (RII).

    (f) Response to request for intelligence information (RRII).

    (g) Tactical electronic intelligence (TACELINT) reports.

    (h) Electronic warfare requesting/tasking message. (EWRTM).

k. The brigade S2 completes the intelligence annex and submits it to the S3 for incorporation into the OPORD. [ARTEP 71-3-MTP, Task 71-3-2002/3].

- GATE TASKS / TASK 7
  INDIVIDUAL/COLLECTIVE PROFICIENCIES

(1) Brigade S2 (STP 34-35II-MQS)
    -Prepare the intelligence estimate (01-3381.41-4004).
    -Assist in preparing the intelligence annex (01-3381.41-4001).
    -Prepare intelligence taskings (01-3381.39-4002).
    -Prepare reconnaissance and surveillance plan (01-3381.06-4011).
    -Develop an intelligence and electronic warfare scheme of maneuver (01-3381.04-5001).
    -Plan employment of IEW assets (01-3381.04-5002).
    -Plan reconnaissance operations (01-3381.44-5001).
    -Produce finished intelligence products from all-source information (01-3381.41-5003).
    -Conduct target development (01-3381.01-4017).

TASK STEPS AND PERFORMANCE MEASURES	GO	NO GO
(2) Brigade S2 Section (ARTEP 34-245-10-DRILL) -Intelligence annex to the operation order (Drill 3). -Brigade R&S planning (Drill 4b).(STP 34-96B14-SM-TG) -Develop decision support template (DST) (301-336-2100). (3) Brigade SR Intel NCO (STP 34-96B14-SM-TG) -Supervise preparation of intelligence estimate (301-336-3104). -Supervise preparation/maintenance of situation map by subordinate personnel (301-336-3051). -Supervise preparation of written analysis of the battlefield area (301-336-3100). (4) DS MI CO CDR (STP 34-35II-MQS) -Assist in preparing the intelligence annex (01-3381.41-4001). -Prepare intelligence taskings (01-3381.39-4002). -Prepare reconnaissance and surveillance plan (01-3381.06-4011). -Develop an intelligence and electronic warfare scheme of maneuver (01-3381.04-5001). -Plan employment of IEW assets (01-3381.04-5002). -Plan reconnaissance operations (01-3381.44-5001). -Produce finished intelligence products from all-source information (01-3381.41-5003). -Conduct target development (01-3381.01-4017). • TASK LINKAGES TO OTHER CCFs/UNITS / TASK 7 (1) Brigade CCF 18, Task 1. -The brigade establishes and maintains communications systems that allow communications and database access with higher, lower, adjacent, and supporting units and staffs. (2) Brigade CCF 19, Task 5. -The brigade establishes and maintains communications systems that allow communications and database access with higher, lower, adjacent, and supporting units and staffs. (3) Brigade CCF 20, Task 5. -The brigade establishes and maintains communications systems that allow communications and database access with higher, lower, adjacent, and supporting units and staffs. (4) Brigade CCF 18, Task 11. -The brigade staff prepares OPORD/FRAGO. (5) Brigade CCF 4, Task 3. -The brigade S2 disseminates intelligence products. (6) Brigade CCF 25. -The brigade S2 participates in OPSEC planning. • LESSONS LEARNED INTEGRATED INTO TASK LIST / TASK 7		

TASK STEPS AND PERFORMANCE MEASURES	GO	NO GO
(1) LL - Decision support templates/matrices must be extended to highlight long-term effects of combat operations so countermeasures can be planned. [CALL Bulletin, "Operation Just Cause Lessons Learned: Volume III. Intelligence, Logistics and Equipment," No. 90-9, Low Intensity Conflict (LIC)-Specific Intelligence Preparation of the Battlefield (IPB), p. III-3].		
(2) LL - The IPB drives tactical planning. The S2 is a key player, but IPB is not strictly an S2 function. The IPB process requires the involvement of the commander and his entire staff. Production of event and decision support templates requires participation by the S3, FSO, ADAO, and engineer at a minimum. The S2 should address priority intelligence requirements (PIR) during the OPORD brief. These are items of combat information that help the S2 fill in the blank pieces of the intelligence puzzle. At a minimum, the S2 must update and disseminate the situation template confirmed by reconnaissance just prior to the battle. He must construct event analysis templates to portray enemy firepower and maneuver options. Finally, he must develop the decision support template to form the basis for staff planning and wargaming. The commander's intent is the cornerstone of the rest of the IPB staff process. The S2 finalizes his collection plan against the commander's intent. This enables him to tell the commander: - What the enemy force opposing them is. - Where it's located. - What kind of terrain they can expect. - Other mission critical information. [CALL Compendium, "Volume I: Heavy Forces," Intelligence And Electronic Warfare, p. 3-4].		
(3) LL - Battlefield deception operations rely extensively on timely and accurate intelligence. To ensure that our deception is seen by the enemy commander as plausible and authentic, we must know what information the enemy is likely to accept, what sources the enemy relies on to gather intelligence, what the enemy needs to confirm information, and what latitude is used in modifying or changing an ongoing or planned operation. In order to answer these questions, deception planners require extensive intelligence support during the planning, execution, and evaluation stages of an operation. The planners require constant feedback on the enemy acceptance of deception in order to modify the plan, if needed, and to ensure that assets allocated to the plan are not wasted. [CALL Bulletin, "Deception," No. 3-88, p. 11-12].		

8. The brigade S2 section assists in issuing and briefing the OPORD. [ARTEP 71-3-MTP, Task 71-3-2006/7].

TASK STEPS AND PERFORMANCE MEASURES	GO	NO GO
• KEY PARTICIPANTS BY TASK / TASK 8		

Brigade commander, brigade XO, S2, S2 section, SR INTEL NCO, DS MI CO CDR, S3, S3 section, CHEMO, FSO, assistant brigade ENGR (ABE), ADA LNO, Army AVN LNO, ALO, S1, S4, BSO, air/naval gunfire liaison officer, MP platoon leader

a. The brigade S2 prepares sketch charts for visual presentation of intelligence information during the OPORD brief. [FM 71-123, p. 1-12; FM 101-5, p. 4-59].

b. The brigade S2 ensures that all key participants (per TSOP) receive appropriate brigade S2 products. [FM 71-123, p. 1-12; FM 101-5, p. 4-59].

    (1) The brigade S2 ensures that the DS MI company has and understands the brigade PIR. [FN-Intel School].

    (2) The brigade S2 ensures that all collectors have and understand the brigade PIR. [FN-NTC, Bde Intel O/C].

c. The brigade S2 briefs the most current enemy situation and capabilities. [FM 71-123, p. 1-12; FM 101-5, p. 4-59].

d. The brigade S2 briefs the collection plan. [FM 71-123, p. 1-12; FM 101-5, p. 4-59].

e. The brigade S2 addresses priority intelligence requirements (PIR) during the OPORD brief. [CALL Compendium, p. 3-4].

f. The brigade S2 conducts final coordination with brigade staff, subordinate unit commanders, and staff to ensure understanding of intelligence plan and products. [FM 71-123, p. 1-12; FM 101-5, p. 4-59].

• GATE TASKS / TASK 8
INDIVIDUAL/COLLECTIVE PROFICIENCIES

    (1) Brigade S2 (STP 34-35II-MQS)
       -Disseminate intelligence and combat information (01-3381.39-4005).

    (2) Brigade S2 Section (ARTEP 34-245-10-DRILL)
       -Conduct intelligence annex to the operation order (Drill 3).
       -Perform briefing/transmitting by radio (Drill 5a).

    (3) Brigade SR INTEL NCO (STP 34-96B14-SM-TG)
       -Supervise receipt/transfer/storage of classified material (301-336-3201).

TASK STEPS AND PERFORMANCE MEASURES	GO	NO GO
(4) Officer Common Tasks for: Bde Cdr, Bde XO, S2, S2 Section, DS MI CO Cdr, S3, S3 Section, CHEMO, FSO, Asst Bde ENGR (ABE), ADA LNO, Army AVN LNO, ALO, S1, S4, BSO, Air/Naval Gunfire Liaison Officer, MP Plt Leader (STP 21-II-MQS, Common Tasks) -Communicate effectively as a commander or staff officer (03-9001.12-0003). -Brief to inform, persuade, or direct (01-9007.01-0250). -Implement operations security (03-3711.12-0001). (5) NCO Common Tasks for: All Primary and Special Staff NCOs (STP 21-24-SMCT, Common tasks) -Conduct operations security (OPSEC) procedures (113-573-0002). -Perform duties in a tactical operations center or admin/log command post (7-1-3904/3036). -Advise and assist staff on elements of BOS that support/impact their staff function (71-3-0001). (STP 34-96B14-SM-TG) -Supervise receipt/transfer/storage of classified material (301-336-3201). • TASK LINKAGES TO OTHER CCFs/UNITS / TASK 8 (1) Brigade CCF 18, Task 1. -The brigade establishes and maintains communications systems that allow communications and database access with higher, lower, adjacent, and supporting units and staffs. (2) Brigade CCF 19, Task 5. -The brigade establishes and maintains communications systems that allow communications and database access with higher, lower, adjacent, and supporting units and staffs. (3) Brigade CCF 20, Task 5. -The brigade establishes and maintains communications systems that allow communications and database access with higher, lower, adjacent, and supporting units and staffs. (4) Brigade CCF 18, Task 12. -The commander/staff issue the brigade OPORD/FRAGO. (5) Brigade CCF 4, Task 3. -The brigade S2 disseminates intelligence products. • LESSONS LEARNED INTEGRATED INTO TASK LIST / TASK 8		

TASK STEPS AND PERFORMANCE MEASURES	GO	NO GO
(1) LL - The S2 should address priority intelligence requirements (PIR) during the OPORD brief. These are items of combat information that help the S2 fill in the blank pieces of the intelligence puzzle. At a minimum, the S2 must update and disseminate the situation template confirmed by reconnaissance just prior to the battle. He must construct event analysis templates to portray enemy firepower and maneuver options. Finally, he must develop the decision support template to form the basis for staff planning and wargaming. Communicating the initial situation template during the OPORD process forces task force leaders to focus on the enemy's intent. A good technique for communicating the IPB is the use of large scale sketches to show expected enemy disposition and actions. [CALL Compendium, "Volume I: Heavy Forces," Intelligence And Electronic Warfare, p. 3-4].		

9. **The brigade S2 updates and refines the intelligence plan.** [ARTEP 71-3-MTP, Task 71-3-2008/3].

KEY PARTICIPANTS BY TASK / TASK 9

    S2, S2 section, SR INTEL NCO, DS MI Co CDR, brigade targeting officer

a. The brigade S2 continues to analyze and refine previously generated IPB and products. [ARTEP 71-3-MTP, 71-3-2008/3].

b. The brigade S2 processes preplanned tactical air reconnaissance requests IAW division and corps SOPs, with advice from the ALO. [ARTEP 71-3-MTP, 71-3-2008/3].

c. The brigade S2 assembles and provides the following for the brigade rehearsal: [AN].

    (1) Current known enemy dispositions and activities.

    (2) Situational template

    (3) Situational matrix.

    (4) HVT list most probable and most dangerous enemy COAs.

    (5) MCOO.

    (6) Annex B, brigade OPORD.

    (7) R&S plan and taskings.

    (8) NAI identifications.

TASK STEPS AND PERFORMANCE MEASURES	GO	NO GO
d. The brigade S2 attends backbriefs and rehearsals with the command group and ensures that refinements and adjustments directed by the brigade commander are incorporated into the intelligence plan [FM 71-123, p. 1-38].		
e. The brigade S2 participates in rehearsals: [AN]		
(1) Provides an overall orientation to the terrain, obstacles, key features, weather, and light effects in the area of interest and the area of operations.		
(2) Provides the initial input to the rehearsal by setting the enemy situation, forecast, and initial enemy move. [AN].		
(3) Depicts enemy actions using the action/reaction/counteraction method. [AN].		
(4) Monitors, overwatches and inputs to the rehearsal of the reconnaissance and surveillance plan, implementation of NAIs, and incorporation of priority intelligence requirements. [AN].		
(5) Identifies and elicits intelligence reporting requirements, format, content, originator, recipient, and nets. [AN].		
(6) Participates in the critique of the rehearsal, identifying any modifying or reinforcing intelligence requirements. [AN].		
f. The brigade S2 proactively seeks information from higher and adjacent units and updates the intelligence plan. [ARTEP 71-3-MTP, Tasks 71-3-2003, 71-3-2004, 71-3-2005, 71-3-2006].		
g. The brigade S2 continuously receives intelligence reports as a result of the collection plan, acquires information from other sources, updates the situation and event templates and other intelligence products, and updates and disseminates products, as appropriate. [ARTEP 71-3-MTP, Tasks 71-3-2003, 71-3-2004, 71-3-2005, 71-3-2006.]		
h. The brigade S2 uses the abbreviated IPB process when time constraints preclude using the more detailed IPB process by: [FM 34-130, p. 2-53].		
(1) Maintaining the current intelligence databases.		
(2) Focusing on essentials.		
(3) Staying objective oriented.		
i. The brigade S2 periodically directs the DS MI company to conduct force protection reviews. [FM 34-1, p. 2-14].		
j. The brigade S2 updates and disseminates the situation template confirmed by reconnaissance just prior to the battle. [CALL Compendium, p. 3-4].		

TASK STEPS AND PERFORMANCE MEASURES	GO	NO GO

• GATE TASKS / TASK 9
INDIVIDUAL/COLLECTIVE PROFICIENCIES
 	
   (1) Brigade S2 (STP 34-35II-MQS)
    -Record intelligence and combat information (01-3381.39-4003).
    -Direct recording and evaluation of information (01-3381.41-5001).
    -See CCF 2 and 3.
 	
   (2) Brigade S2 Section (ARTEP 34-245-10-DRILL)
    -Record intelligence information (Drill 1).
    -See CCF 2 and 3.
 	
   (3) Brigade SR Intel NCO (STP 34-96B14-SM-TG)
    -Supervise unit collection effort (301-336-4101).
    -See CCF 2 and 3.
 	
   (4) DS MI CO CDR (STP 34-35II-MQS)
    -Record intelligence and combat information (01-3381.39-4003).
    -Direct recording and evaluation of information (01-3381.41-5001).
    -See CCF 2 and 3.
 	
• TASK LINKAGES TO OTHER CCFs/UNITS / TASK 9
 	
   (1) Division CCF 2
    -The G2 disseminates highly perishable combat information
    immediately after receipt.
 	
   (2) Brigade CCF 18, Task 1.
    -The brigade establishes and maintains communications systems that
    allow communications and database access with higher, lower,
    adjacent, and supporting units and staffs.
 	
   (3) Brigade CCF 19, Task 5.
    -The brigade establishes and maintains communications systems that
    allow communications and database access with higher, lower,
    adjacent, and supporting units and staffs.
 	
   (4) Brigade CCF 20, Task 5.
    -The brigade establishes and maintains communications systems that
    allow communications and database access with higher, lower,
    adjacent, and supporting units and staffs.
 	
   (5) Brigade CCF 19, Task 1.
    -The brigade S2 performs actions to refine the OPORD.
 	
   (6) Brigade CCF 20, Task 2.
    -The brigade command posts evaluate acquired information, update
    products, and maintain status.		

TASK STEPS AND PERFORMANCE MEASURES	GO	NO GO
(7) Brigade CCF 2, Task 4. -The brigade S2 disseminates highly perishable combat information immediately after receipt.		
(8) DS MI Company CCF 4. -The DS MI company commander reports intelligence information.		
(9) TF CCF 2, Task 4. -The TF S2s report intelligence information.		
(10) TF CCF 4, Task 4. -The TF S2s disseminate intelligence.		
(11) Engineer Battalion CCF 4. -The S2 reports intelligence information.		
(12) DS FA Battalion CCF 4. -The S2 reports intelligence information.		
(13) FSB CCF 4. -The S2 reports intelligence information.		
(14) ADA Battery CCF 4. -The ADA battery commander reports intelligence information.		
(15) MP Platoon CCF 4. -The MP platoon leader reports intelligence information.		
• LESSON LEARNED INTEGRATED INTO TASK LIST / TASK 9		
(1) LL - The commander and XO should ensure that: -The tracking of enemy events related to the commander's intent during the battle is coordinated. [CALL Combat Training Centers (CTCs) Bulletin, "Lessons and Information," No. 93-4, Tactics, Techniques And Procedures (TTP), Intelligence p. 27].		
(2) LL - The IPB process is dynamic and requires constant re-evaluation. Refugees and unpredictable civil elements compound this. [CALL Bulletin, "Operation Just Cause Lessons Learned: Volume III. Intelligence, Logistics & Equipment," No. 90-9, Low Intensity Conflict (LIC)-Specific Intelligence Preparation of the Battlefield (IPB) p. III-3].		
(3) LL - Confirm the IPB. The IPB paints a picture of the battlefield. It provides confirmation of enemy intentions, and what the force looks like that you will face. [CALL Bulletin, "The Musicians of Mars: A Story of Synchronization for the Company/Team Commander," No. 90-6, p. 16].		

TASK STEPS AND PERFORMANCE MEASURES	GO	NO GO
(4) LL - The S2 should address priority intelligence requirements (PIR) during the OPORD brief. These are items of combat information that help the S2 fill in the blank pieces of the intelligence puzzle. At a minimum, the S2 must update and disseminate the situation template confirmed by reconnaissance just prior to the battle. He must construct event analysis templates to portray enemy firepower and maneuver options. Finally, he must develop the decision support template to form the basis for staff planning and wargaming. All key leaders and staff must realize that the IPB process never stops. Templates require continuous updating throughout all aspects of operational planning and execution. Notifying all key personnel of all significant changes is critical to the process. IPB is not a process separate and distinct from all the other staff processes. It applies staff actions to gathering information toward answering certain questions relative to the ongoing mission. [CALL Compendium, "Volume I: Heavy Forces," Intelligence and Electronic Warfare, p. 3-4].		
(5) LL - Battlefield deception operations rely extensively on timely and accurate intelligence. To ensure that our deception is seen by the enemy commander as plausible and authentic, we must know what information the enemy is likely to accept, what sources the enemy relies on to gather intelligence, what the enemy needs to confirm information, and what latitude is used in modifying or changing an ongoing or planned operation. In order to answer these questions, deception planners require extensive intelligence support during the planning, execution, and evaluation stages of an operation. The planners require constant feedback on the enemy acceptance of deception in order to modify the plan, if needed, and to ensure that assets allocated to the plan are not wasted. [CALL Bulletin, "Deception," No. 3-88, p. 11-12].		

TASK PERFORMANCE / EVALUATION SUMMARY BLOCK							
ITERATION	1	2	3	4	5		TOTAL
TOTAL TASK STEPS EVALUATED							
TOTAL TASK STEPS "GO"							
TRAINING STATUS "GO"/"NO-GO"							

"*" indicates a leader task step.

Appendix E

ANALYSIS OF ASAT MODULE REQUIREMENTS FOR BATTLEFIELD FUNCTION (BF) FUNCTION ANALYSIS (FA)

The most critical consideration in the selection of an ASAT module was the necessity to ensure that the BF FA retained its integrity so as to provide information relevant to the analysis performed on the BF for a unit. To achieve this, it was necessary to select an ASAT module which can best portray the structure and organization of BF FA information. Since BF FAs are organized to express the hierarchy and relationship of information through the use of indentions (i.e., tabs) similar to that used when outlining information, the organization of the information in ASAT through the use of indentions was important.

For example, a BF FA "Task List" component contains tasks with several layers of sub-tasks and task elements to portray a hierarchal relationship. To illustrate this relationship, an extract from task 3 of the FA for brigade BF 1, "Conduct Intelligence Planning," is provided below.

Task 3, Conduct Intelligence Planning

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3. The brigade S2 describes the battlefields effects.

   a. The brigade S2 conducts terrain analysis.

      1) ---------

      2) ---------

      3) ---------

      4) ---------

      5) The brigade S2 coordinates with the rest of the brigade staff in evaluating effects of terrain on air and ground operations.

         a) The ABE assists the brigade S2 in evaluating the effects of terrain on ground operations:

            (1) ---------

            (2) ---------

            (3) The ABE performs the mobility analysis for both the brigade and enemy points of view considering:

               (a) Observation and fields of fire.

               (b) Cover and concealment.

As reflected above, Task 3 of BF 1 with its task elements and subtasks contains six levels of indenture. There are several components of a BF FA which reflect information organized in the same manner; therefore, it was desirable that the selected ASAT module provide the same capability to organize information.